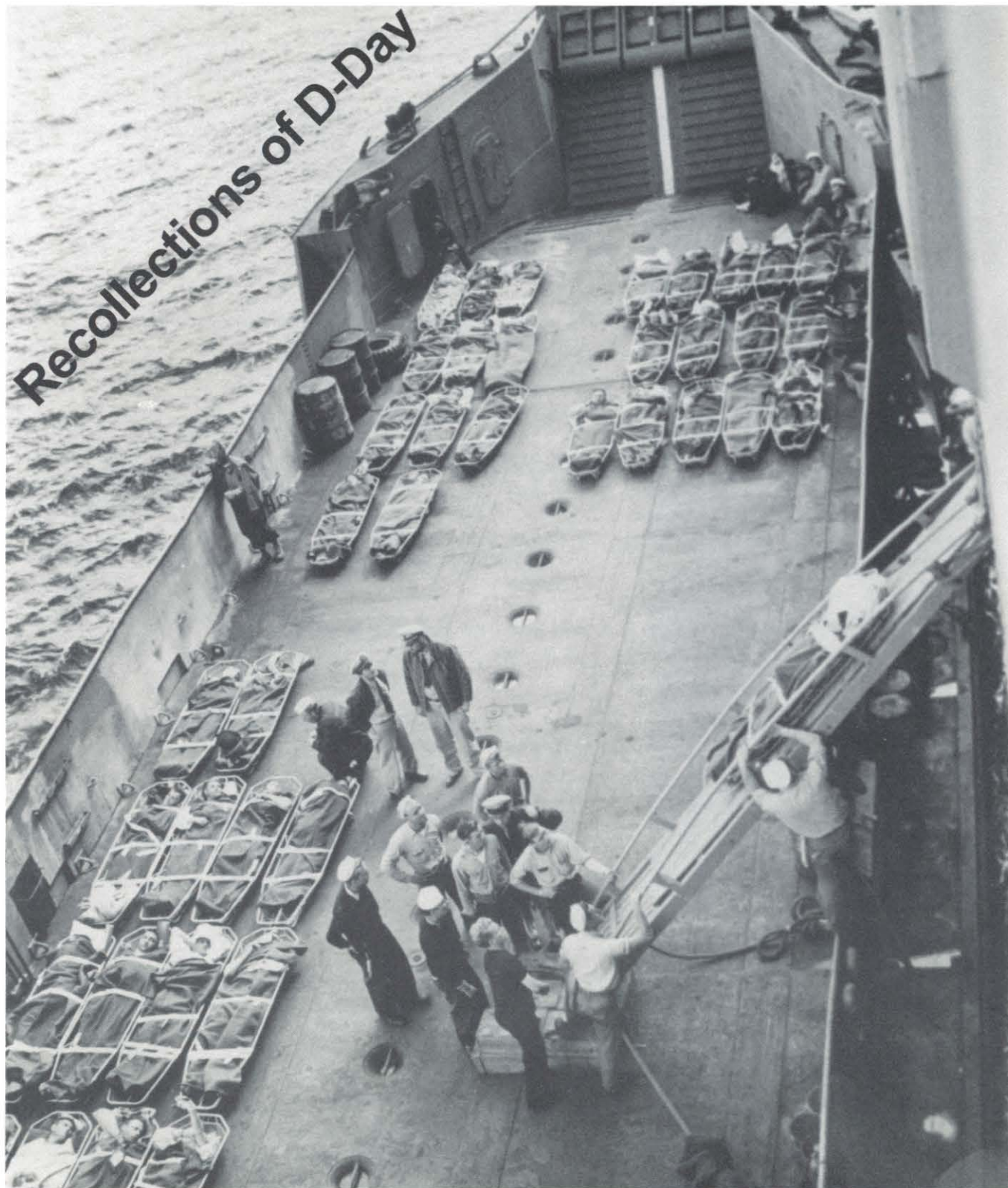


NAVY MEDICINE

May-June 1994

Recollections of D-Day



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COVER: Following landings on the Normandy beaches, wounded American soldiers are transferred from a Coast Guard assault transport to a tank landing craft somewhere in the English Channel. Stories begin pages 5, 13, and 20. Photo from BUMED Archives.

Sara's Dermatology Team

Anyone who's ever heard the fable of the war that was lost for want of a horseshoe nail can understand how lack of attention to detail can snowball into much bigger problems. It can also sum up one of the biggest reasons why, for the first 90 days of the deployment, USS *Saratoga's* (CV-60) medical department will be joined by a four-man dermatology team from Bethesda, MD, and Norfolk, VA.

The team is composed of two medical officers, one medical microbiologist, and one chief hospital corpsman, who have set up the most scientific operational dermatologic study the Navy has seen in more than two decades. What are they looking for?

"Very simple," said CAPT Dennis Vidmar, MC, residency director of dermatology at the National Naval Medical Center, Bethesda, MD, and the team's leader. "We want to find out what dermatologic conditions, from skin rashes to sexually-transmitted diseases, afflict this crew."

Vidmar explained that *Saratoga* was chosen because it is an example of what his team was looking for, a large operational command that will be spending a lot of time at sea. "This will be the Navy's first real in-depth dermatological study in 25 years. We want to find out how much time off the job they (skin problems) cause, resources used to diagnose them, treatment cost, etc. Vidmar added that his team's 90-day study is designed to be both scientific and

safe. During routine sick call, any patient complaining of any kind of skin ailment or sexually-transmitted disease will be sent to see Vidmar or one of his team members. The patient then has the option of volunteering for the study.

"Our patients are treated the same whether they volunteer for the study or not," Vidmar said. "No experimental methods are being used; it's all proven, textbook practices. None of our patients are being tested or used as guinea pigs. We are merely anonymously collecting data concerning routine diagnosis and treatment."

PHAR Robert Zukowski



Laboratory analysis is essential to any medical study, including the one being conducted aboard *Saratoga*. Here, CDR William Bearsley, a medical microbiologist, studies a germ sample in *Sara's* medical lab.

He added that only those patients who volunteer for the study will be included in it. So far, all but two patients have agreed to participate.

"The only experimental part of the study is the data we're collecting," he said. "People will be treated as if they were being seen by anyone else in the medical department." At press time, Vidmar estimated that his team has already examined roughly 250 patients, and may treat as many as 2,000 by the time their study is concluded.

Even after their study aboard *Saratoga* is over and the data has been compiled, Vidmar says there will still be work to do. "Basically, I will present a kind of bill to the type force commander. It will summarize the cost to the battle group in terms of down time, cost of treatment, and lost man hours."

Although Vidmar could not say precisely where his final report will wind up, he is certain his chain of command will see it. "I intend to pass those results up the line," he said. "There are medical and operational commands who are very concerned about the losses stemming from these problems. It's something we'd all like to see fixed."

Vidmar said that his study is truly a win-win situation for his team and the crew. "My philosophy over the years has always been to support our operational forces. All this project is, is another attempt to do that." □

—Story by JO2 Joshua Janoff, Public Affairs, USS *Saratoga* (CV-60).

U.S. Navy Medical Research Returns to Vietnam

A Collaborative Malaria Control Project Begins in the Central Highlands

LCDR Gary E. Tetreault, MSC, USN

During the Vietnam war era, U.S. military forces suffered over 50,000 cases of malaria. Even though 20 years have passed since the withdrawal of American combat forces, protecting U.S. military personnel from malaria in Cambodia, Laos, and Vietnam is still a concern in military medicine. Every month, scores of Army, Navy, Marine, and Air Force personnel are deployed to these countries to search for remains of those still listed as Missing In Action. In addition, with population migrations in Southeast Asia and increasingly permeable borders, malaria problems in any one country may affect the entire region.

Unfortunately, primary data on the characteristics of malaria transmission available to U.S. medical personnel dates back to the early 1970's. Worldwide, the last two decades have witnessed dramatic changes in the field of malariology, including the development of insecticide resistant malaria mosquitoes and parasite strains which are resistant to one or more medications. Until recently, the opportunity to obtain critical information from this area of the world was impossible.

In December 1992, the Joint Task Force for Full Accounting (JTF-FA),

the MIA Task Force working in Southeast Asia, was requested by the Socialist Republic of Vietnam (hereafter referred to as Vietnam) to conduct a malaria survey. The Ministry of Health requested this assistance to have the recent and alarming upsurge of malaria in Vietnam evaluated by an outside agency. The request was forwarded to the U.S. Commander in Chief, Pacific (USCINCPAC) who tasked the Navy Environmental and Preventive Medicine Unit No. 6 (NEPMU-6) at Pearl Harbor to assemble a team and deploy on short notice. The team was comprised of myself, and two preventive medicine technicians, HM1 Paul S. Helfrich, and HM1 Edna Broy.

Our team traveled extensively throughout Vietnam, beginning in Hanoi where we spent several days meeting with officials from the National Malaria Control Program and researchers from the Institute of Malariology, Parasitology and Entomology, the center for malaria control research in Vietnam.

The institute, which is directly responsible for the malaria abatement work in the northern provinces, provided us with information on the current status of countrywide malaria transmission as well as historical data

dating back to 1976.

The Vietnamese were extremely cooperative, responded forthrightly to all questions, and provided all requested data. We learned that the malaria control program has relied heavily in the past on foreign aid from China, the former Soviet Union, and other European countries. In recent years such aid as money, anti-malarial drugs, and insecticides has gradually declined. At the time of our first visit in January 1993, Vietnam was no longer receiving foreign aid for their malaria control program. As Vietnam's economy is still agrarian-based and poor, the government does not have the resources to fully support their malaria control program. The increase in cases of malaria and associated deaths can be attributed to the lack of effective vector control measures and drugs to treat patients.

They reported 1,072,507 confirmed cases of malaria in Vietnam with 4,646 deaths in 1991. In 1992 the number of cases jumped to 1,352,823 with 2,632 deaths. Reports for the first 8 months of 1993 showed 654,448 confirmed cases of malaria have been reported along with 630 deaths. According to 1991 statistics, more cases are reported from the highlands in the north. In the southern provinces transmis-

sion in coastal regions predominates while the number of cases from the central provinces are distributed approximately equally among coastal and highland regions. On a country-wide basis, the incidence of malaria is much higher in the highlands than the coastal areas.

The mosquitoes primarily responsible for transmission in the highland regions of Vietnam are *Anopheles minimus* and *Anopheles dirus*. In the coastal areas, *Anopheles sundiacus* and *Anopheles subpictus* are the main vectors. The two coastal species are known to be resistant to DDT while the two highland vectors are susceptible. Countrywide, *Plasmodium falciparum* accounts for approximately 80 percent of all cases. *Plasmodium vivax* accounts for the other 20 percent. Malaria cases in the highlands are due mainly to *P. falciparum* while *P. vivax* is more prevalent in coastal areas. There is reportedly, widespread drug resistance in the parasites. Approximately 80 percent of *P. falciparum* is resistant to chloroquine and 75 percent are resistant to fansidar. Deaths are due mainly to cerebral malaria complications and renal failure in patients infected with *P. falciparum*.

The aforementioned transmission statistics represent only a small fraction of the medical information we were able to obtain. Before leaving Hanoi we also visited with researchers at the Institute for Hygiene and Epidemiology, which provided data indicating that dengue fever and Japanese encephalitis virus transmission

are also serious public health problems.

Our next stop was Ho Chi Minh City, formerly named Saigon. We spent 2 days with the staff of the Sub-Institute for Malariology, Parasitology and Entomology (Sub-IMPE) reviewing information on the specifics of malaria transmission in the southern provinces. From there, we were taken to two villages to observe living conditions. One was a coastal village where the people made a living from rice production and fish culture. The other was a highland village where most of the population worked in nearby rubber tree plantations and grew crops in the hills. We also visited a commune clinic and a district hospital to observe conditions in the malaria treatment wards and speak with the Vietnamese about how they manage patients. They told us that mortality is caused not only by a lack of medications but also from an acute shortage of life support equipment to stabilize severe cases.

We proceeded on a grueling 700-kilometer drive by van up the coast to the Sub-IMPE in Qui Nhon which is

the center for malaria abatement work in the central provinces. The trip took 2 full days because of poor road conditions. At the end of the first day we stayed in Nha Trang, which is a picturesque coastal city about two-thirds of the way to Qui Nhon. The trip was long and tiring but well worth it. We had the opportunity to pass through many towns and villages and observe the routine activities of the Vietnamese. Also, the scenic contrast between the flat coastal plains and the mountains to the west was spectacular.

We spent 2 days with the institute staff discussing malaria in central Vietnam. Three of the four highland provinces where malaria transmission is most severe are in the central region. These areas are also areas of intense JTF-FA activity. We were taken to a remote village in the Vinh Thanh district inhabited by the ethnic group known as the Bana, one of 16 ethnic groups in central Vietnam. The people of this region subsist on agriculture, clearing sections of the mountains using slash and burn technique. They also go into the forests to har-

HM1 Edna Broy



LCDR Tetreault with Mr. Vinh, a representative of the Ministry of Health from Hanoi to his left. To Mr. Vinh's left is the director of the Public Health Department and in the foreground is the assistant director. Photo taken in one of the study Hamlets in Vinh Thanh. The people in the background are some of the Bana villagers.

vest bamboo and other trees to produce brooms and baskets and other simple things for sale. The medical personnel at the district health service told us that 1992 was a particularly bad year for malaria.

The next leg of the journey found us driving the 300 kilometers to Danang to visit the Quang Nam Danang malaria station. We also received an overview of the Vietnamese health care system and the status of infectious disease transmission from the director of the provincial hospital. We visited another remote highland village populated by members of the Catu ethnic group. This one took nearly 3 hours to get there; the village is inaccessible by automobile during the rainy season due to flooding. The people of this region are extremely poor and we had to bring our own food with us as well as some for the villagers. In each village we visited during our survey the housing construction ranged from brick to wood to hardened mud to bamboo and thatch. In each case the houses are built in ways which allow for easy invasion by malarious mosquitoes. There are no screens on the windows and few people can afford bednets to sleep under.

Our survey concluded with a flight from Danang to Hanoi to meet with representatives from the Ministry of Health and the National Malaria Control Steering Committee. We received a formal request for aid for the malaria control program, which I forwarded to USCINCPAC upon our return. However, due to current statutory limitations, some of the requested assistance will have to be deferred until trade restrictions against Vietnam are lifted. Other aspects such as collaborative survey efforts which specifically support JTF-FA activities in Vietnam can be accommodated.

The malaria control program has a very high priority with the Vietnamese government. They recognize that malaria is their number one public health problem and aggressively seek support to determine the most effective ways to interrupt transmission. With such mutual interests, a joint malaria control project was proposed between NEPMU-6 and the Sub-IMPE in Qui Nhon. This research effort was subsequently funded by the Pacific Command under CINC Initiative Funding for medical investigations in Southeast Asia sponsored by the USCINCPAC Surgeon's Office. Logistic support for the project was provided by the JTF-FA.

Since the initial survey, I have journeyed back to Qui Nhon on two occasions, bringing equipment and supplies to implement the investigation. The Sub-IMPE in Qui Nhon was chosen because of its excellent staff of 80 physicians, epidemiologists, entomologists, and technicians, and its close proximity to hyperendemic mountainous districts where malaria transmission is highest. The study is designed specifically to model highland malaria transmission. The goal will be to develop the most efficient strategies to control and prevent malaria transmission in hyperendemic areas. Data generated by this project will be used to formulate the most effective malaria prevention recommendations for U.S. military personnel operating in Vietnam. The malaria control research project is a historic initiative in the postwar era. It provides an all important window into a region with a very serious public health problem which has implications not only for Vietnam and its bordering countries but for U.S. military personnel deployed in the region.

At the present time, four study hamlets in the Vinh Thanh district of Binh Dinh province have been chosen as

study sites. The hamlets are populated by the same Bana people that we visited during the initial survey. These villages are in the lower highland area near the border with Gia Lai Province. These areas are characterized by year-round malaria transmission with peak activity occurring in late fall (October-December) and late spring (May-June). The project is well under way and scheduled to continue for at least 1 year.

On a more personal note, each time I have traveled in Vietnam I have been extremely impressed by the courteous manner in which I was treated. I was informed at the outset by the Vietnamese officials to "go anywhere I want." To each city I went I visited tourist areas as well as local markets and shopping areas. At no time have I experienced anti-American sentiments from the local populations. On the contrary, they like Americans. Even the Bana villagers, most of whom have never met an American, were openly friendly to me and very willing to cooperate with the research project.

This is indeed a unique opportunity to work with a group of talented and dedicated Vietnamese health professionals. Our joint project will help to improve our ability to develop effective preventive medicine guidance for the JTF-FA and other U. S. military units deploying in Southeast Asia. This collaboration will also greatly assist the Vietnamese in addressing their most pressing public health problem while, at the same time, build bridges for improved relations between the United States and Vietnam. □

LCDR Tetreault is assigned to the Navy Environmental and Preventive Medicine Unit No. 6, Pearl Harbor, HI.



The Tragedy of Exercise Tiger

LT Eugene E. Eckstam, MC, USNR (Ret.)

Dr. Eugene E. Eckstam was a Navy medical officer who participated in the training exercises leading up to D-Day. One of these rehearsals, Exercise Tiger, ended disastrously when German E-boats torpedoed three amphibious ships killing over 750 soldiers and sailors. In order to maintain security for the upcoming invasion, the Slapton Sands incident was never acknowledged at the time and remained a secret for 40 years.

More lives were lost in one exercise practicing for D-Day than during the invasion of Utah Beach on 6 June 1944. That rehearsal was called "Exercise Tiger." Planning for the greatest amphibious operation in history required many such exercises, each designed to test the readiness of plans for the invasion of Normandy and the efficiency of the troops. Duck, Fox, Muskrat, Beaver, and Trousers preceded Tiger, and Fabius followed. Each was larger than the last, and the later ones used live ammunition.

Because it resembled Utah Beach, these exercises used Slapton Sands, a beach on the English Channel east of Plymouth in Lyme Bay. Other smaller exercises were held many places in southern England, especially at Woolacombe.

Exercise Tiger involved some 300 ships and 30,000 men. Thirty of the ships were LSTs, which loaded at Plymouth, Brixham, and Dartmouth. The first units landed at H-hour, the morning of 27 April 1944. H-hour was delayed 1 hour, causing landings and shelling to coincide. And not all ships got the message.

Convoy T-4 consisted of eight LSTs bringing up the rear and due to land at H + 24 hours. I was on LST-507, which was last in line. The convoy circled Lyme Bay at 4 knots. Only

one British escort vessel accompanied us, another remained in Plymouth with a hole in its bow. Much later, a replacement was sent, but too late to effect the tragic outcome of Exercise Tiger. German E-boats (torpedo boats) plied the Channel and Lyme Bay several times a week and the night of 27-28 April was one of them.

I was a brand new Naval Reserve medical officer, fresh out of an abbreviated senior year and internship, totally unprepared for what was to follow. I knew only about the role of

Were You There?

Exercise Tiger Casualties: Were you there? 28 April 1944 in Southwest England. Most Army Medical Units in southern England were on alert from 0200 till dawn, with no explanation given. German E-boats torpedoed three LSTs, sinking two with a loss of 639 or 750 lives in the English Channel near Weymouth.

It appears that all casualties were taken to the Weymouth-Portland area, then to Brookwood Cemetery near London.

Are you aware of any injuries or deaths on the practice invasion beach at Slapton Sands on 27-28 April 1944, or at any other practice invasion there? There were several. Both Army and Navy medical personnel may have been involved.

There is no secrecy now. The Freedom of Information Act in 1973 changed that and our Archives files are open. Even the British files are open. I have both. So you are free to talk about it.

Write with any information you have on Exercise Tiger. I can answer many of your questions.

Eugene E. Eckstam, M.D.
2118 20th Avenue
Monroe, WI 53566
Phone: 608-325-2559



Dr. Eugene Eckstam as a young Navy medical officer.

such physicians on LSTs and this training was short.

My first assignment in January 1944 was Great Lakes Naval Training Station in Illinois. I followed the other physicians on the North Shore electric train to the Great Lakes Naval Hospital and checked in. The next morning I found the difference between Hospital and Mainside! I was assured all the paperwork would be transferred. It wasn't, as I later discovered.

At the recruiting center, Mainside, we examined an average of 1,700 recruits a day. In a week I became an expert in hemorrhoids, hernias, and right ears. Then I, and perhaps 50 other new physicians, reported to Lido Beach, Long Island. A few thousand hospital corpsmen of all ranks were there too. Thus, individual outfits of Foxy 29, the code name for our medical unit, were formed by taking two physicians and an assortment of 40 corpsmen. We were supposed to drill and train our "men." After the brass saw hilarious marching formations colliding, the Marines took over.

Our training at Lido Beach was the introduction to the LST and its uses as a medical evacuation ship. We had some exposure to gas warfare, and endured unpleasant contacts with several chemical agents. Units shipped out at regular intervals on LSTs. We left on 10 March 1944.

As LST-507 was dropping off cargo and loading supplies in various English ports, our medical unit was sent to Fowey for a week of intensive training on chemical warfare and general first aid. This all added up to very little preparation for an invasion with major casualties.

When our medical unit reported back to LST-507, it was in Brixham and had loaded some 290 Army personnel. The tank deck held 22 DUKWs (amphibious trucks) with jeeps and trucks topside, all chained to the deck and fully fueled. Army troops were everywhere.

Loading occurred 24 April 1944. We and two other LSTs sailed from Brixham on the afternoon of 27 April to join five LSTs coming from Plymouth. Only recently I found that our British escort had been warned about E-boats in the area, but the U.S. forces had not been given the correct radio channel to monitor. We sailed along in fatal ignorance.

General Quarters rudely aroused us about 0130. I remember hearing gunfire and saying they had better watch where they were shooting or someone would get hurt. At 0203 I was stupidly trying to go topside to see what was going on and suddenly "BOOM!" There was a horrendous noise accompanied by the sound of crunching metal and dust everywhere. The lights went out and I was thrust violently in the air to land on the steel deck on my knees, which became very sore immediately thereafter. Now I knew how getting torpedoed felt. But I was lucky.

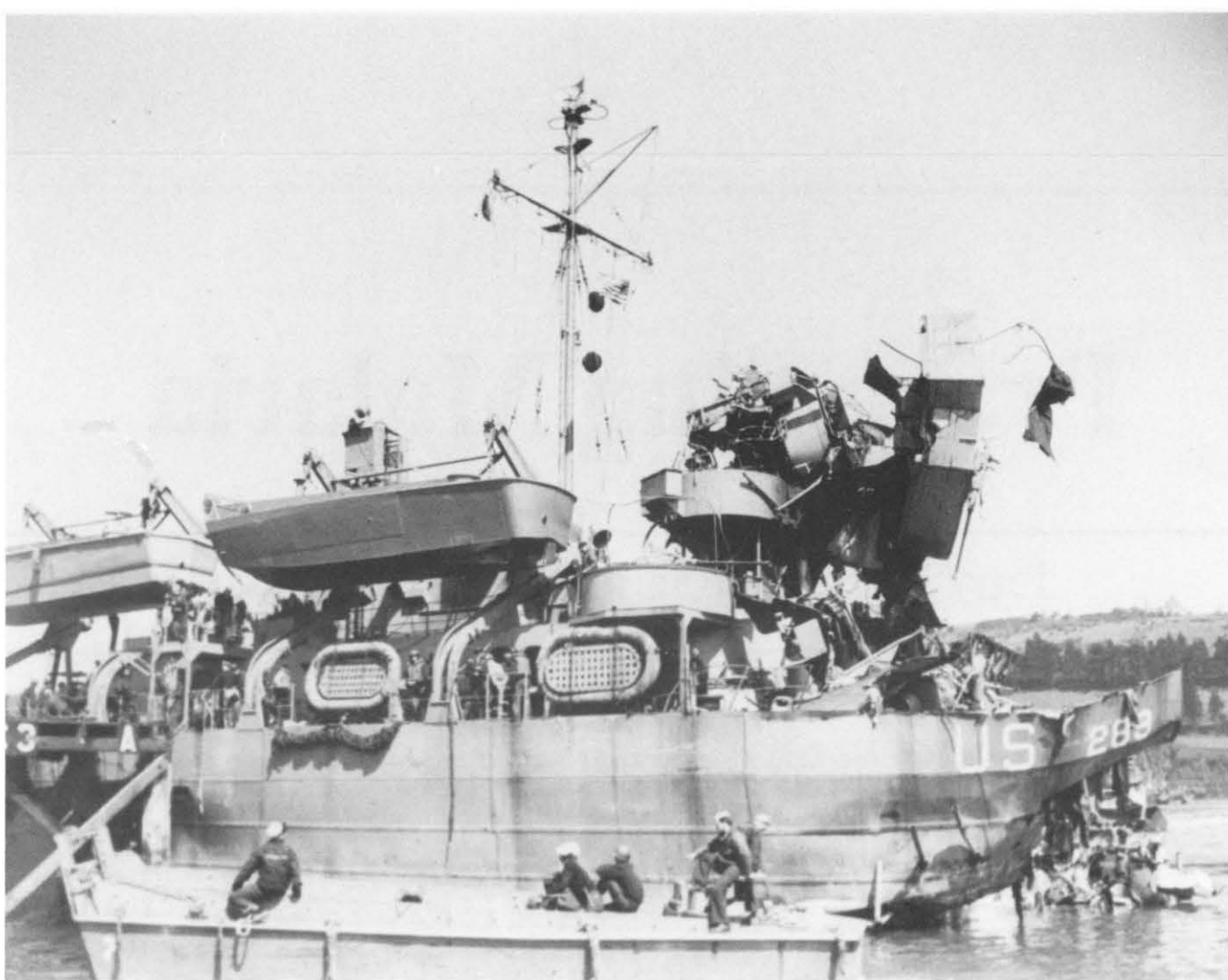
The torpedo hit amidships starboard in the auxiliary engine room, knocking out all electric and water power. We sat and burned. A few casualties came into the wardroom for care and, since there was ample help, I checked below decks aft to be sure no one required medical attention there. All men in accessible areas had gone topside.

The tank deck was a different matter. As I opened the hatch, I found myself looking into a raging inferno which pushed me back. It was impossible to enter. The screams and cries of those many Army troops in there still haunt me. Navy regulations call for dogging the hatches to preserve the integrity of the ship, and that's what I did.

Until the fire got so hot we were forced to leave the ship at 0230, we watched the most spectacular fireworks ever. Gas cans and ammunition exploding and the enormous fire blazing only a few yards away are sights forever etched in my memory.

Ship's company wore life jackets, but the medics and Army personnel had been issued inflatable belts. We were told only to release the snaps and squeeze the handles to inflate. Climbing down a cargo net, I settled into the 42 degree F. water, gradually getting lower as the life belt rose up to my arm pits. The soldiers that jumped or dove in with full packs did not do well. Most were found with their heads in the water and their feet in the air, top heavy from not putting the belts around their chests before inflating them. Instructions in their correct use had never been given.

I recall only brief moments of hearing motors, of putting a knee on a small boat ramp, and then "awakening" half way up a Jacobs ladder. I was on the only American ship, LST-515, to rescue survivors. This was at dawn, about 0600. I had been in the



The fantail of LST-289 following the Slapton Sands incident. The explosive force of a German torpedo has wrenched the aft gun mount into a vertical position. Two other LSTs were sunk in the German E-boat attack.

Naval Historical Center

water over 2 hours fully dressed and insulated. Those that had stripped to swim, only God knows where they died. Drowning and hypothermia were the two major causes of death. I often wonder if many "dead" victims were really in a state of hibernation, and what would have happened had we been able to immerse them in warm tubs. But who ever heard of a tub on an LST in wartime? We couldn't even do a reliable physical exam under the circumstances.

Both dead and alive were taken to Portland. The dead went on to Brookwood Cemetery near London where they were buried individually. The rumor of mass graves is false. We got dry clothes, courtesy of the American Red Cross and then an exam

at an Army field hospital in Sherborne. An Army physician, Dr. Ralph Greene, was there and later did the first American research on Exercise Tiger.

After a month's leave, all were reassigned and most boarded other LSTs for the invasion of Normandy. Others were given shore assignments. For me, Normandy was a piece of cake. LST-391 made one run carrying Rangers Headquarters Staff to Omaha Beach. We took 125 injured from Utah Beach to England. The Army tent dispensary at the beachhead had done an excellent job with these men. Our supplies contained only about six 20 cc syringes with 1 1/2-inch needles. We gave 1 cc (20,000 U) of penicillin every 3 hours to each

of the next 20 men with the same syringe and the same needle, but with no withdrawal of the plunger. After a brief boil, syringes and needles were reloaded. There was no other way to keep the schedule. In England, the medical group was detached to stage for the Pacific.

When I got home, I tried to reestablish my pay and insurance records. Great Lakes Naval Hospital did not transfer my life insurance to Mainside! And me with a fairly recent bride. □

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Dr. Eckstam resides in Monroe, WI, and is an expert on Exercise Tiger.

Preventing Malaria

Part 2 of Somalia and General Slim

CDR James M. Crutcher, MC, USNR
LCDR Trueman W. Sharp, MC, USN
CDR Mark R. Wallace, MC, USN
CAPT Stephen L. Hoffman, MC, USNR

Part 1 appeared in March-April 1994.

Malaria discipline refers to the multicomponent program of preventing malaria. It involves the use of personal protective measures and chemoprophylaxis as well as ongoing monitoring and enforcement.

Personal Protective Measures*

If mosquitoes can't bite you, you can't get malaria. Table 1 shows the methods of protection from biting insects. These methods will also pro-

tect against many other mosquito-borne diseases, such as dengue fever and Japanese encephalitis, as well as diseases spread by other arthropods such as ticks and biting flies. They should be employed to the fullest extent practicable in the operational setting.

Methods of avoidance of arthropods include choosing bivouac sites that are dry and uncluttered, avoiding rodent burrows and animal pens, and limiting contact with indigenous human populations since they may serve as reservoirs of disease.

Physical barriers include the proper wearing of clothing and the use of protective equipment, such as head nets, bed nets, insect repellent parkas, and tent screens. Proper wearing of clothing reduces the amount of exposed skin and includes tucking the pant leg into boot or sock, rolling

TABLE 1
Methods of Protection Against Mosquitoes and Other Biting Insects

1. Avoidance of arthropod habitats
2. Physical barriers
 - Proper clothing
 - Bed nets
 - Head nets
3. Repellents
 - DEET
 - Permethrin
4. Mechanical modifications
 - Drain standing water
 - Clear litter and underbrush
5. General sanitation
 - Proper disposal of trash and waste
6. Pesticides

Reference: *U.S. Army Environmental Hygiene Agency Technical Guide No. 174*, June 1991 (Personal Protective Techniques Against Insects and Other Arthropods of Military Importance).

*An excellent reference for more in-depth information on personal protective measures, including supplies and procedures, is the *U.S. Army Environmental Hygiene Agency's Technical Guide No. 174* (Personal Protective Techniques Against Insects and Other Arthropods of Military Significance) which may be obtained by contacting 410-671-3613/3677, DSN 584-3677, or Aberdeen Proving Ground, MD 21010-5422.

down sleeves, closing the collar, and wearing undergarments and a cap. For malaria prevention it is most important to do this at sunset. These recommendations may not be practical in hot, humid environments.

Since the time of highest risk for malaria transmission is at night, the proper use of bed nets is an essential component of malaria prevention. The net should be erected so as to prevent contact of the net with the sleeping person and tucked in around the mattress or cot to preclude entry of arthropods. Added protection can be achieved by treating the bed net with permethrin. This will protect against arthropods small enough to fit through the mesh of the net (e.g., sandflies, midges) and will also prevent insects from biting through the mesh to skin in contact with the net. The treatment should be effective for several months if not rinsed out. The insecticide aerosol 2 percent d-phenorthrin can be used to kill mosquitoes inside bed nets and tents. Keeping lighting to a minimum at night will avoid attracting insects.

Arthropod repellents can be used on the skin (DEET) or fabrics such as clothing, bed nets, or tents (permethrin). DEET is a vapor active repellent and works very well for insects such as mosquitoes which bite exposed skin or through light weight clothing. The DEET formulation currently recommended for military use is the 33 percent extended duration cream. This provides protection for 6-12 hours, depending on environment. Permethrin, a contact repellent which is also toxic to arthropods, provides better protection against arthropods which crawl underneath clothing in addition to biting exposed skin, such as sand flies, biting midges, ticks, chiggers, and fleas. Uniforms impregnated with permethrin have been shown to provide almost 100

percent protection against tick bites after five washings and that even after 50 cold water rinses permethrin impregnated fabric killed 100 percent of mosquitoes and ticks.(1) For clothing treated with the aerosol spray, the current recommendation is to reapply after 6 weeks or the sixth laundering, whichever comes first. Dry cleaning completely removes permethrin. Clothing application of permethrin alone ordinarily does not protect exposed skin since there is very little vapor action. Consequently, both DEET and permethrin are required to provide maximum protection. If permethrin is not available, DEET may be applied to clothing to obtain additional protection. The effectiveness of repellents may vary among arthropod species in different parts of the world. Avon Skin-So-Soft is a bath oil which is often used as an insect repellent. Laboratory testing found that although it did repel mosquitoes for a short time, it was neither as effective nor as persistent as DEET(1) and it is not recommended for military use.

Mechanical modifications may be used to eliminate mosquito breeding sites, such as draining standing water when possible and preventing water from accumulating in containers and ground depressions. General camp sanitation decreases feeding and hiding sites not only for insects but for rodents which may serve as reservoirs of disease. Pesticides can be very effective in controlling arthropods in certain situations, but should only be employed by persons trained in their use. Information concerning the use of pesticides and other entomology concerns can be obtained by contacting the entomology departments of the Navy Environmental and Preventive Medicine Units.

Chemoprophylaxis

The other component of malaria prevention is the use of drugs to kill the organism once it has gained access to the body but before it can cause illness. Remember that malaria has two developmental phases in the body—one in the liver (which is asymptomatic) and the other in the

Reported Malaria Cases in U.S. Navy and Marine Corps Personnel, February 1988 to May 1993, Excluding Somalia (N = 210)

Service		Area of Disease Acquisition	
U.S. Navy	63	Western Pacific/SE Asia	173
USMC	147	Philippines	145
		Other	28
Type Command		Africa	24
USMC Pacific	131	Other	13
USMC Atlantic	14		
Surface Forces Pacific	22	Species	
Surface Forces Atlantic	5	<i>P. falciparum</i>	53
Air Forces Pacific	2	<i>P. vivax</i>	60
Air Forces Atlantic	4	<i>P. ovale</i>	1
Other	32	<i>P. malariae</i>	1
		Mixed	9
		Unspeciated	86
Cases reported to Navy Environmental and Preventive Medicine Units by Disease Alert Reports			

blood—and that drugs that work against the blood phase don't work against the liver phase, and vice versa.

Rationale for Chemoprophylaxis. Malaria chemoprophylaxis always involves the use of a blood schizonticide (e.g., mefloquine, doxycycline, or chloroquine) and usually a tissue schizonticide (primaquine) as well. The blood schizonticide is begun prior to the exposure (2 weeks for chloroquine and mefloquine, and 2 days for doxycycline) and continued for 4 weeks after the exposure has ended. Beginning the drug prior to exposure serves two purposes—it allows time to achieve effective blood levels and also to determine if the person can tolerate the medication. The drug is continued for 4 weeks after the exposure (referred to as terminal prophylaxis) in order to maintain a drug level adequate to kill any organisms which emerge from the liver after the person has left the area. For example, if a person is bitten by an infective mosquito just prior to leaving, the organisms will be in liver cells, and therefore unaffected by blood schizonticides, for the next 1-3 weeks. If there is no drug in the blood when the organisms emerge from liver cells, the person will become ill. Additionally, if there has been a risk of exposure to one of the species which forms hypnozoites, *P. vivax* and *P. ovale*, then a tissue schizonticide (primaquine) is also needed after leaving the area to eradicate these forms in the liver. Although the risk varies geographically, Haiti and the Dominican Republic are the only malarious areas with no known risk of *P. vivax* or *P. ovale*.

Drug Resistance. Malaria chemoprophylaxis is becoming more difficult due to increasing prevalence of drug resistant *P. falciparum*. Resistance to chloroquine is confirmed or

probable in all countries with falciparum malaria except Haiti, the Dominican Republic, Central America west of the Panama Canal, Egypt, and most of the Middle East. Resistance to chloroquine and Fansidar is present in parts of SE Asia, sub-Saharan Africa, and the Amazon basin area of South America. Mefloquine resistance is prevalent in Thailand along the borders with Cambodia and Burma and has been reported from Africa and Indonesia. Chloroquine resistant *P. vivax* has recently been discovered on the island of New Guinea.

Current Chemoprophylactic Regimens. For naval personnel deploying to malarious areas, one of three regimens may be used, depending on local resistance patterns and potential for adverse effects. Navy personnel should contact the appropriate NEPMU for the most current recommendations.

(1) Mefloquine 250 mg, once per week, beginning 2 weeks prior to entering malarious area and continuing until 4 weeks after leaving.

(2) Doxycycline 100 mg, once per day, beginning 2 days prior to entering malarious area and continuing until 4 weeks after leaving.

(3) Chloroquine phosphate 500 mg, once per week, beginning 2 weeks prior to entering malarious area and continuing until 4 weeks after leaving.

If primaquine is needed, which it usually is after military operations, it may be given either 15 mg (one tablet) per day for 14 days, or 45 mg (3 tablets in a single dose) per week for 8 weeks. Because of the potential for hemolysis, primaquine is generally not given to persons who are G6PD deficient. The daily regimen may be given anytime during the 4-week period in which the person is taking terminal prophylaxis with the blood

schizonticide. Primaquine resistant *P. vivax* occurs, but the frequency is unknown. Several possible cases were seen in persons after returning from Somalia. The resistance is usually relative as most persons who fail the 15 mg/day for 14 days regimen will respond to retreatment with 30 mg/day for 14 days.

Chloroquine has few side effects but its use is restricted due to widespread resistance. Mefloquine is effective in most areas and has the advantage of a weekly dosing schedule. Although side effects are associated with the treatment dose of mefloquine, a recent study showed the weekly prophylactic dose to be as safe as chloroquine.(2) The recent Somalia experience revealed the importance of the 2-week pre-exposure dosing of mefloquine for achievement of protective blood levels. It was recently shown that a 3-day loading dose (250 mg/day) achieves effective blood levels more rapidly than the 2-week regimen.(2) At present, general Navy policy remains to begin mefloquine 2 weeks prior to exposure. However, the 3 day loading dose may be indicated in some situations, such as rapid deployments to highly malarious areas in which there is not enough time to complete the 2-week course. Side effects may be more common with this regimen. Mefloquine is the most expensive of the regimens.

Doxycycline is similarly effective in most parts of the world and is the preferred regimen along the borders of Thailand where mefloquine resistance is prevalent. However, it must be taken daily, making compliance more difficult, and side effects are common, especially GI upset. If doxycycline is used it is very important to take it with food to decrease incidence of GI problems. This applies to the other chemoprophylactics as well.

Chloroquine is the only malaria chemoprophylactic available in the United States approved for use in pregnancy. Although not currently approved for such use, no adverse outcomes have yet been associated with the use of mefloquine during pregnancy.

None of the above regimens are 100 percent effective in preventing falciparum malaria in all parts of the world. Because of widespread resistance, cases may be seen even if the medications are taken exactly as prescribed.

For more detailed information on the use and side effects of these drugs, consult the Navy Medical Department Guide to Malaria Prevention and Control.

Preparing for Malaria

It is obvious that malaria prevention is no simple task, especially when dealing with it for the first time. The following guidelines should help the operational medical officer and corpsman prepare for deployment to a malarious area.

1. Know the Risk. The first thing to do is to determine if malaria is a threat and, if so, what chemoprophylactic regimen is recommended. The best source of that information in the Navy is the Navy Environmental and Preventive Medicine Units (NEPMUs) and their country specific disease reports, Disease Risk Assessment Profiles (DISRAPs). Because malaria risk and chemoprophylaxis recommendations can change rapidly, it is always best to consult with an NEPMU prior to deployment. Table 3 gives information on how to contact the NEPMUs. Another excellent source of information about malaria and other travel-related issues is the Center for Disease Control's Health Information for International Travel (HHS

Publication No. CDC 93-8280) and may be ordered from the Government Printing Office, Washington DC 20402, (202) 783-3238.

2. Inform the Commanding Officer. It is imperative that you have support for malaria prevention efforts from your command. This must start at the top and be passed down through the chain of command. Line officers must understand the potential of malaria to adversely affect operational readiness.

3. Educate Command in Malaria Discipline. Try to increase individual motivation for complying with malaria discipline by educating forces about the risk and consequences of disease (i.e., falciparum malaria is a potentially fatal disease) and about the means of prevention.

4. Assemble Needed Supplies. Many supplies are needed for the prevention, diagnosis, and therapy of malaria. Predeployment preparation is necessary to prevent later shortcomings. Things to consider include the proper amount of chemoprophylactic medications (for both in-country and terminal prophylaxis), bed nets, DEET, permethrin, and spray insecticide (2 percent d-phenothrin). For operations in areas with intense insect exposures, head nets and insect repellent parkas may be needed. Also obtain needed diagnostic supplies, such as giemsa stain, and drugs for therapy of malaria cases.

If chloroquine resistance is present, then quinine or mefloquine is indicated for therapy of uncomplicated cases and intravenous quinidine for therapy of complicated, life-threatening infections. Not all the above supplies are generally included as part of routine Authorized Medical Allowance Lists (AMAL). For detailed information about prevention, diagnosis, and therapy of malaria, obtain a copy of the Navy Medical Depart-

ment Guide to Malaria Prevention and Control.

5. Once Deployed, Monitor and Enforce Malaria Discipline. This is critical, as adherence to preventive measures naturally wanes with time. Take whatever steps are necessary to assure chemoprophylaxis is being taken. It is imperative to involve the chain of command, especially senior

TABLE 3

Navy Environmental and Preventive Medicine Units (NEPMU), With Area of Responsibility (AOR) for Malaria Recommendations

NEPMU-2 (AOR - Central/South America, Caribbean, Iceland)
Naval Station
Norfolk, VA 23511-6288
DSN 564-7671; COM (804) 444-7671; FAX (804) 444-1191
PLAD: NAVENPVNTMEDU TWO NORFOLK VA

NEPMU-5 (AOR - Canada, Mexico, Alaska)
Naval Station, Box 143
San Diego, CA 92136-5143
DSN 526-7070; COM (619) 556-7070; FAX (619) 556-7071
PLAD: NAVENPVNTMEDU FIVE SAN DIEGO CA

NEPMU-6 (AOR - Pacific, SE Asia to India)
Box 112, Naval Station
Pearl Harbor, HI 96860-5040
DSN 471-9505; COM (808) 471-9505; FAX (808) 474-9361
PLAD: NAVENPVNTMEDU SIX PEARL HARBOR HI

NEPMU-7 (AOR - Europe, Africa, Middle East, Russia)
PSC 810 Box 41
FPO AE 09619-4200 (Naples, Italy)
DSN 625-1110, ext. 4470/69; COM (from U.S.) 011-39-81-724-4470/69
PLAD: NAVENPVNTMEDU SEVEN NAPLES IT

enlisted, in this function. Direct administration of pills is the best way to assure compliance. This is easier with weekly medications. Administer pills after meals to decrease GI complaints. Continue to promote the use of personal protective measures, but realize that some of these may not be practical due to operational or environmental factors.

6. At End of Deployment, Re-educate About Importance of Terminal Prophylaxis. Most malaria cases in recent Navy experience, including Somalia, were due to failure to take terminal prophylaxis. Although the drugs are usually distributed, personnel often fail to comply because they feel they are not at risk for malaria since they are no longer in the country. Postdeployment cases may be decreased by educating personnel about the liver stage of the disease, and, whenever possible, continuing monitoring and enforcement of chemoprophylaxis after leaving the area.

Could It Be Malaria?

Because of the travel associated with military service, Navy medical

personnel must always be on the alert for malaria when evaluating a patient with a febrile illness. It should be considered in any patient with a febrile illness and a history of exposure to a malarious area.

Because malaria may occur months to years after the exposure occurred, many persons are far removed from the malarious area when they become ill and only a good travel history will identify malaria as a possible cause. For example, one of the malaria cases from Somalia became ill in Iceland. A history of adequate chemoprophylaxis does not rule out malaria, due to widespread resistance. Although the classic symptoms are fever, chills, headache, and muscle aches, malaria may mimic many other diseases. It should be considered in anyone with a fever and a history of exposure, regardless of what other symptoms are present or absent. Malaria is frequently misdiagnosed as "viral syndrome" and "gastroenteritis."

Until a vaccine or highly effective chemoprophylactic drug are available, which are not on the im-

mediate horizon, malaria will remain one of the most significant threats to military operations. Only by awareness and constant vigilance to preventive efforts can we avoid past experiences, such as those of General Douglas MacArthur who stated in 1943: "This will be a long war if for every division I have facing the enemy I must count on a second division in the hospital with malaria and a third division convalescing from this debilitating disease!"(3)

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3. Slim W. *Defeat Into Victory*. 2nd ed. London: Cassell & Co; 1956. □

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The Faces of AIDS . . .

I look into their eyes and try to imagine what might have been before the nightmare began

I look into their eyes, and struggle to understand why we embrace ignorance and fear, instead of each other

I look into their eyes, and sense their courage and determination to survive, despite unsurmountable odds and I am humbled

I look into their eyes, and behold their outstretched hands just beyond my grasp and I feel helpless

I look into their eyes, and see a life just fading away, holding on tightly to a glimmer of hope, within a sea of despair, and I am angered

I look into their eyes, and feel the chill of silence, their cries for help unanswered, their pleas for life ignored, and I am frightened

I have looked into their eyes and they have touched my soul and have made me realize, that someday . . .

I may look into their eyes and see me.

Lawrence A. Griffin
HMC(SW), USN, IDC



Photo by Editor



Mr. and Mrs. Feduik today

A Corpsman Remembers D-Day

On 6 June 1944, the "Great Crusade" to liberate Europe from the Nazis began when the Allies invaded Normandy. The day is now simply known as D-Day. Pharmacist Mate Frank R. Feduik was assigned to LST-338, which landed on Omaha Beach. For the next 12 months, LST-338 ferried men and supplies back and forth from England to France making over 60 trips across the English Channel and earning the title "workhorse of the amphibious fleet." Navy Medicine recently interviewed Mr. Feduik about his World War II experiences.

I graduated from high school in June of 1942 and enlisted in the Navy, something I always wanted to do. As soon as I turned 17 I tried to enlist but my mother and father wouldn't sign. Therefore, I had to wait until I turned 18 in January 1943 before I was able to join.

I was assigned to a new boot camp in Sampson, NY. That alone was an experience because it was out in the middle of nowhere, frozen Lake Seneca. You had to knock the ice down to take a boat drill. Of course, when you're young, it's an adventure. You didn't care. You just went ahead and did it.

I was amazed when I was told I was going to Portsmouth, VA, to pharmacist's mates school. "Why me," I asked. I never had any medical training. But I think they assigned us to various schools by our last name. You know, those with names starting with A to D went to one school and E to G, another school. I can only say one thing. Six weeks of training doesn't give you much experience in anything. We just learned first aid. Actually, it was more giving each other needles, how to apply tourniquets, things like that. We kind of joked about it. What are we supposed

to do after we get out of here? But it didn't take us long to find out.

After Portsmouth I went to the Philadelphia Naval Hospital for a short time. I remember distinctly going to a psychiatric ward where there were a lot of Guadalcanal veterans. Boy, that was an experience. They were very young guys and they were completely gone. They were in another world; their eyes seemed to be staring somewhere into space. They were tied to their bunks and there were armed guards watching them. Our instructors wanted us to know what battle fatigue was and how to cope with it. It really depressed us.

Eventually, I went to New York and boarded the *Queen Mary* on Easter morning 1944. Believe it or not, it was so congested that I slept in the big empty swimming pool. Actually, I never got up topside, staying in the swimming pool for 5 days. They

utilized all the space they could. We never even unpacked our seabags. You just laid your head back on it and slept. The *Queen Mary* traveled alone because it was so fast [over 30 knots] no sub could keep up with it.

LST-338

Once I reached England I was assigned to the LST-338. It had just returned from Italy, where it had been in the invasion of Sicily. When I saw this thing, I said, "Oh, God. This can't be my ship. It's ugly. What is it?" There was an old saying that if you were assigned to the amphibious fleet in the Navy, you had to have screwed up somewhere. I hadn't done anything wrong and I wondered why I had been assigned to this LST. I spent the rest of my overseas time on that ship.

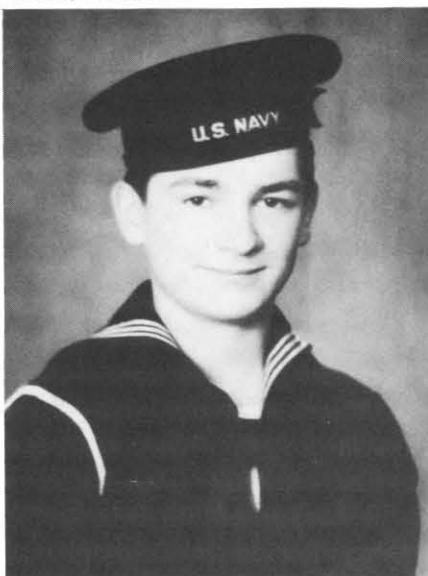
LST-338 was the command ship for flotilla 12, group 36. Our skipper was an old mustang. His name was [Darrell A.] Stratton, a mean son of a gun. He had been promoted from a seaman to a chief warrant officer, and then made a lieutenant commander during the war. He was very gung-ho, volunteering us for everything.

Invasion Postponed

We left England on the fourth of June and the Channel was unbelievably rough. They said it was the worst storm of the century. It was just disaster. Nearly everyone got sick. I was just lucky; I never got seasick. I felt sorry for the troops. I thought, "These guys have to be unloaded into these LCVPs (landing craft vehicles and personnel) and go into battle? There's no way they can fight in this condition."

However, the invasion was postponed and we returned to port. We left again the following day and the weather was a lot calmer. I was on deck during the crossing. Boy, it was

Courtesy Frank Feduik



Frank Feduik as a very young pharmacist's mate.

dark. But we made sure we always had the English corvettes in sight because they protected us from submarines. Every LST also carried a big balloon to keep German planes from coming in low and strafing us. We thought it was a joke because it was like announcing to the world, "Here we are under this big dirigible." When we got close to the beach, the Germans began shooting at these balloons. We had been told that if we had to, to cut the cable from the winch. So when they started shooting, everybody cut the balloon loose. You should have seen that bunch of balloons taking off from those LSTs.

D-Day

One of my more distinctive memories was the battleships in action on D-Day. I think they were the *Arkansas* (BB-33) and the *Texas* (BB-35). It was such a din! They were behind us as we were going in and these shells would sing their way right over the ship. Some of the targets, I would say, were 8 and 10 miles inland. Every once in a while you would hear or see a big explosion way inland and we

knew they had hit an ammunition dump or something.

It was such a hectic thing, everybody firing this way, beach fire coming at you. They were firing at us from the pillboxes on the beach. You would hear the shells coming at you. You could hear them whirring by and when you saw them hit the water...well if you were in the wrong place, forget about it. Those German 88s were awful. Once you heard them bark and you were still alive, you knew they hadn't gotten you because that shell would be on top of you before the noise got there.

We did get hit by shrapnel every once in awhile. I do remember one incident when we got hit. I was directly beneath one of the gun mounts trying to set up an aid station under gun number 4. As I was coming up the ladder, I heard this noise, and then heard a fellow who was in the gun mount, say, "Round and round she goes and where she stops nobody knows." Evidently, a piece of shrapnel had gotten into the gun mount and wound its way around until it exited. I couldn't imagine how cool he was.

On 8 June we got orders to unload our cargo on Omaha Beach.* We didn't actually beach ourselves, instead using smaller LCTs (landing craft, tank) to unload the LST. I was able to hitch a ride on one of the LCTs. On Omaha Beach there was just chaos and confusion everywhere. I don't think we hit the right part of the beach. We saw a lot of people completely lost who didn't know where they were. I didn't see any Navy corpsmen or Navy aid stations. But I did see a lot of Army medics. They established their aid stations wherever they could. We saw bodies—some were our

*Omaha Beach was one of two American beachheads. Defended by the 352nd German Infantry Division, it was the toughest beach to crack.

troops, some were theirs. I saw people with arms and legs missing, parts of bodies. You just couldn't understand it—guys not even making it to the beach, some of them impaled on iron rails that were in the water. Some were washed ashore. It was complete mayhem, terrible.

After unloading our cargo, our LST was filled with wounded. We treated the wounded, mostly by applying tourniquets and giving morphine. Then we would mark the patients as to what time you had given the morphine to tell when they were due for the next shot. I remember one soldier. I knew he was in pain so I checked him right out. His leg was missing. He had stepped on a mine right on the beach. I gave him a morphine shot and told him he would be okay for a couple of hours. He jumped up and looked at

the stump. I don't know where he got the strength. He said, "I'm a farmer. What am I going to do?" I pushed him back and told him he would be okay. He just screamed. He was only 20 years old.

When we met the other ship we transferred the casualties over by hand. If you can imagine two ships bobbing with all this stuff going on and wondering whether this guy is going to slip off the stretcher between the two ships. But that's how we transferred wounded.

I think we went back to England that night. We were ordered to give the British a hand. So we went up the Thames River, loaded up with British troops and went to Gold Beach. This is where I got stuck on the beach. Our ship backed off before I got back aboard so I was left with the British

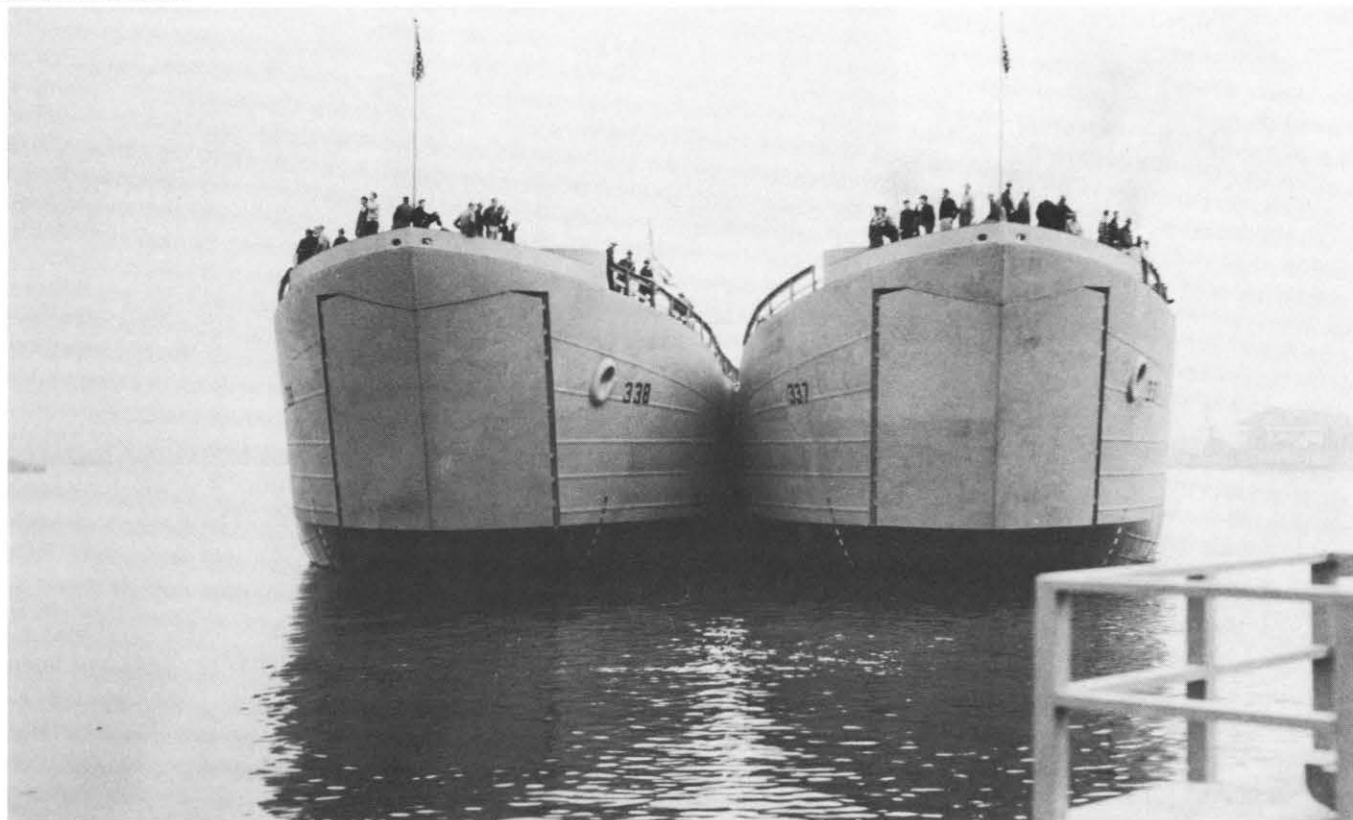
troops. I ended up staying on the beach all night. I could see the small arms fire coming right at us. I thought, "I'm not a British soldier, I'm a sailor. I want out of here." I don't think I got any sleep that night. The next morning, an LCVP picked me up and took me back to the ship.

After D-Day

After I returned to the LST, we headed back to England. We made 60 more trips like that. Our captain, LCDR Stratton volunteered for everything so we got to carry all sorts of cargo and do all sorts of missions. However, there were a few jobs that really stick out.

Our snow weasel experience was such a comical thing. In December 1944, we loaded up with these strange little tanks called snow weasels. The

Naval Historical Center



Freshly minted LST-338, along with sister ship, at the Norfolk Navy Yard, Portsmouth, VA, 8 Nov 1942

Germans had broken through our lines during the Battle of the Bulge and we had to get those snow weasels over there. We dashed alone across the Channel at night. There was always a red alert on the beach because you didn't know whether there were any German planes, even though the Luftwaffe was about through. The skipper hollered over the PA system. "Open up the doors and get those tanks off. I've got a bunch of French soldiers getting on and they're going to take these out of here. We gotta get off this beach." The French soldiers didn't know what to do. He kept hollering, "Let's go." Since they didn't do anything I jumped into one of the first ones. Of course, I didn't know how to run a snow weasel. There were some controls, one for the left tread, one for the right tread. I just hit the button, started it and away I went. I don't think I got a hundred yards up the beach when I ran out of fuel. At least, I think I ran out of fuel. Well, everybody thought where I stopped must be the bivouac area where we were supposed to leave them so everyone else stopped too. We came back to the ship and started laughing. We didn't know if anybody came and picked them up. It was crazy—such chaos. It was funny things like that that made you laugh later on.

One of the strangest cargoes were railroad cars. We had rails welded onto the tank deck of the ship. We pulled up to the hard cobblestone ramps in English ports, built specifically for LSTs to beach themselves, and railroad engines and cars were wheeled right onto our ship. We also had special landing ramps in Cherbourg and Le Havre which had rails. We would go in and connect to these rails. The cars were then pulled



by an engine right off our ship as if it was part of a rail transportation system. It was fantastic.

We also made about a dozen runs to bring German prisoners back to England. We would load hundreds in the tank deck. They were well guarded by guys with machine guns standing on a parapet. These prisoners were tough, hardened soldiers. One trip was especially memorable. One of my best friends from home, Andy Banko, had gone into the Army. We had said that when the war was over we would tie on a jag and have a helluva good time when we got back. After I got in the Navy, I didn't hear

from him for about a year. And then I got a letter from him. He was over in Italy and he said something about going to take some mountain called Monte Cassino. I was elated that I had heard from him. I wrote him back reminding him of how we would celebrate once the war was over. Just after we picked up a load of German prisoners, I got a mail pickup in France. My letter to Andy had been returned, with "DECEASED" stamped on the back; killed in action.

One of my jobs was to make sure the lister bags had water for these troops because we still had to treat them humanely. But to me, right



then, the Germans weren't human. Here my best buddy had just been killed. These prisoners were arrogant, very arrogant. I'm looking at these POWs and thinking, "I'm giving you guys water and you just killed my buddy?" I had no sympathy for them because I knew what they had done.

We once even went up the Seine River deep into France. A few weeks after D-Day, our skipper, LCDR Stratton, volunteered for this special mission to pick up some French resistance fighters. So we had to travel up the Seine, behind German lines, under the cover of darkness. We didn't

know how deep the channel was and had been told that the channel was mined. We poked our way up without a light and when we got to a certain area, we got a signal. There was just a mess of French underground soldiers who, evidently, had been fighting for years. They were starved, unshaven, and wearing disheveled clothes. They were the FFI, the French Forces of the Interior. We picked them up and got out of there.

Additional Duties

Although I was a corpsman, I actually did quite a bit more. If they needed you to take care of casualties, you did that. If not, they would think nothing of telling us to help out elsewhere. You were assigned different places during battle stations [general quarters]. For awhile, I was assigned to a 20mm gun as a loader. I was also on the annunciators which controlled the engines. The skipper was right above me on the conning tower. He would relay his orders to me. I had to repeat each order back to him. If he said, "All ahead one-third," I would say, "All ahead one-third, sir."

I also remember being sent aft to the emergency steering room. Nobody wanted to go aft because that's the only place a torpedo could hit you. Aft, the LST had a 12-foot draft while up forward it was between 7 and 8. We thought a torpedo had to have at least 10 or 12 feet of water to hit a ship. When we traveled in convoy under a submarine alert it seemed that the ship was front-heavy. Everybody would be up forward even if they didn't belong there. We felt sorry for the guys who were aft on emergency

steering. Once a torpedo hit an LST you were done, forget it.

After VE-Day

After the war in Europe ended, I was told they would put me in for a chief petty officer but that I would have to leave the ship. I refused the promotion offer, just wanting to go home. After loading some cargo at Belfast, Ireland, we headed across the Atlantic. Don't ever cross the North Atlantic in an LST. Those waves were 60 or 70 feet high. We couldn't sleep without tying ourselves into our bunks. Often we would lose sight of the convoy because the waves and swells were so high. I would stand on the stern and watch the front end of the ship bend. I was surprised it didn't crack.

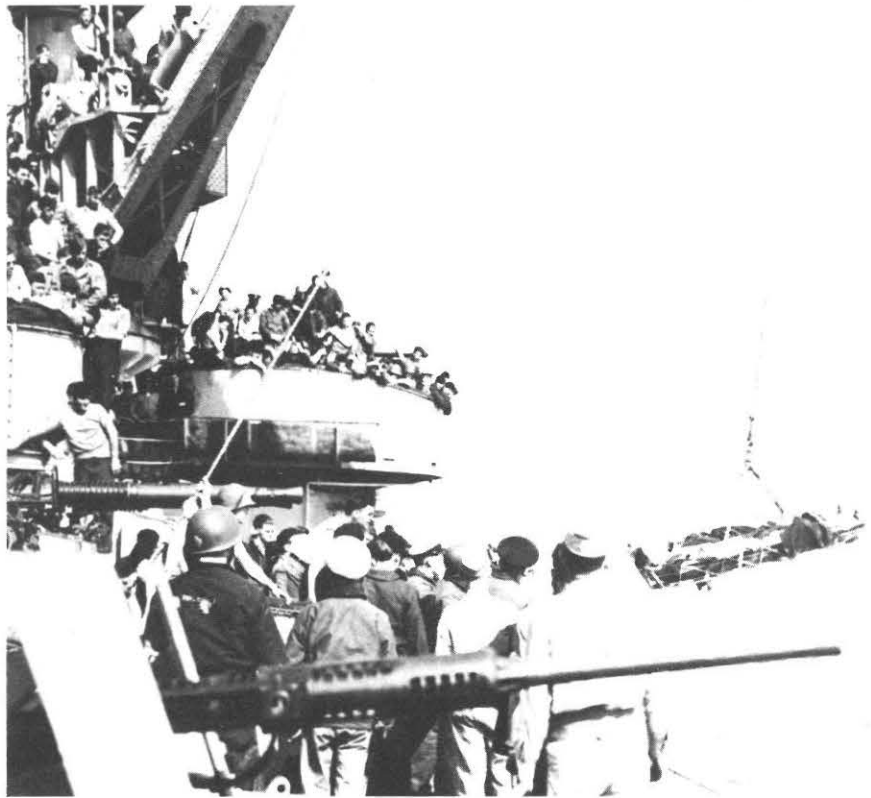
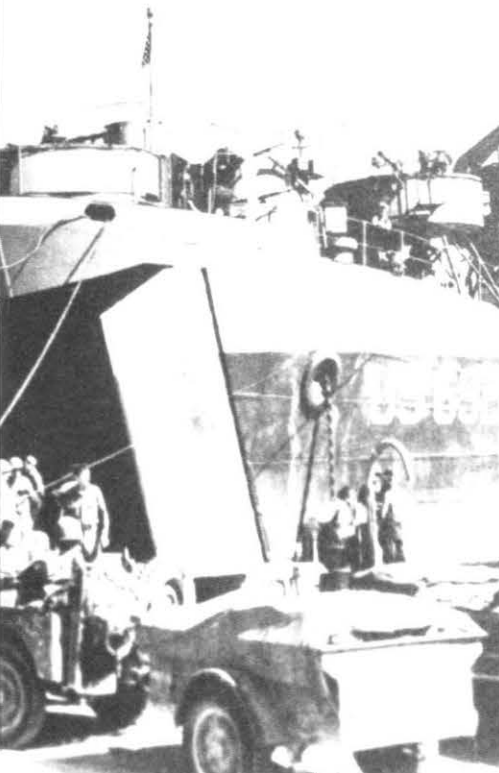
After a leave in New Orleans and home I found that I had been assigned to another ship, an LCI (landing craft, infantry), that was to participate in the invasion of Japan. This was not good. An LCI would be there right at the first firing—at H-hour minus one. I just didn't want to go back to the thick of the fighting. I was on the bus to go from Philadelphia to board the LCI in Norfolk, when the [atomic] bomb was dropped. I got on the ship but never went to the Pacific as the war ended. At that time I had enough points to get out. They assigned me to Lido Beach, Long Island [New York], and from there I went home.

I didn't like the amphib at the beginning but I was proud I served on an LST. It was an experience. I was a young kid and everything was an adventure to me. I wouldn't have missed it for the world.—JKH



Above: Amphibious vessels and their barrage balloons head for France, 5 June 1944. Below: Soldiers embark for the final run to the beach, 6 June 1944. Middle top: LSTs disgorge their cargo. Middle bottom: Paratrooper wounded in initial assault is brought to a landing craft for evacuation.



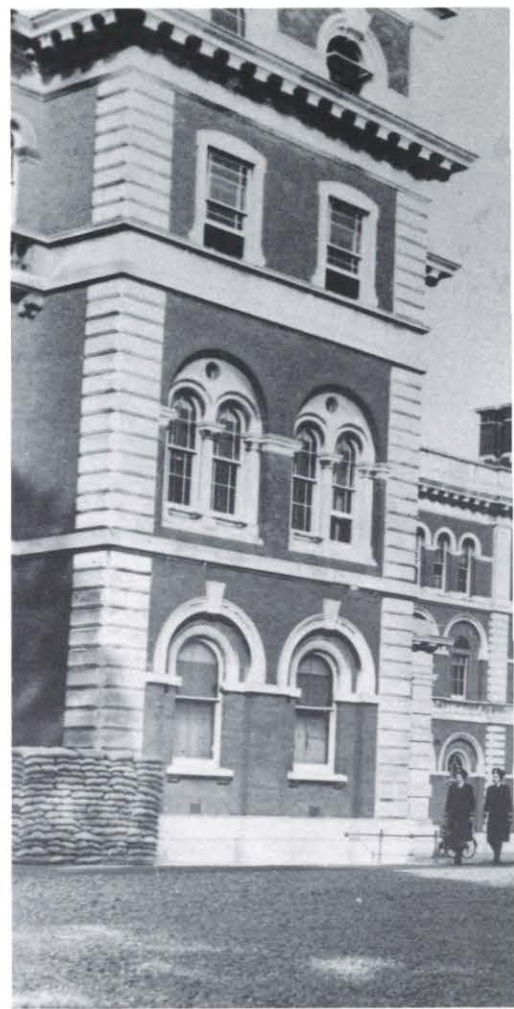


Above: Crewmen from USS Texas (BB-35) hoist wounded Army Rangers from landing craft aboard, 15 June 1944.
Below: After unloading its cargo at Normandy, an LST makes the return trip to England full of casualties.





Navy Nurses Remember the Invasion



***T**he men that stormed Hitler's "Fortress Europe" on 6 June 1944 were predominantly troops of the U.S. Army, but D-Day was not solely an Army show. It was Navy ships and personnel that brought the soldiers and their equipment from England, and Navy battleships, cruisers, destroyers, and rocket-firing amphibious assault vessels that pounded German fortifications and cleared the way to the beaches and beyond.*

Although Navy medical personnel were not present on the French beaches in large numbers, the Navy Medical Department nevertheless played a key role in providing care to the wounded. Physicians and corpsmen aboard specially equipped LSTs (landing ship, tank) and LCTs (land-

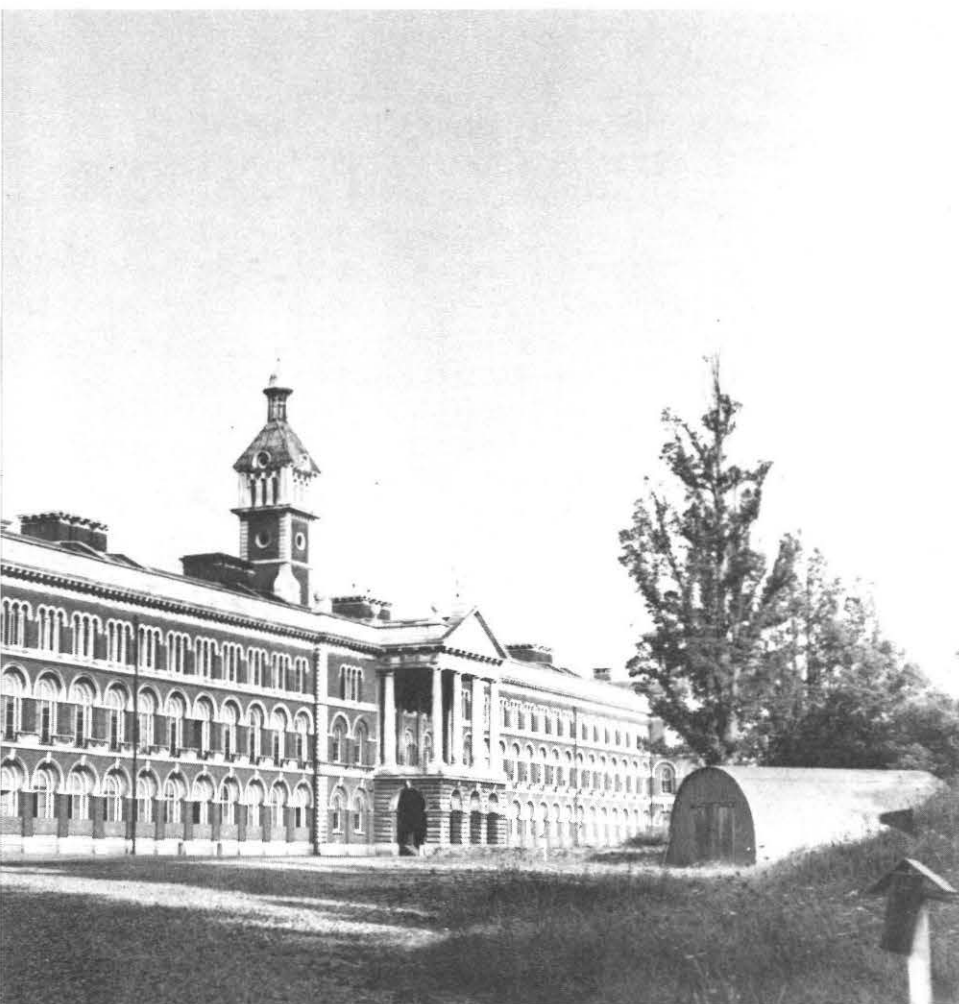
ing craft, tank) gave primary emergency treatment once the casualties were evacuated from Utah and Omaha. And once safely back in England, Navy medical personnel, including nurses, triaged, conducted emergency surgery, and stabilized the injured until they could be evacuated to other hospitals in Britain or back to the United States for more definitive treatment.

One of those hospitals in southern England was Navy Base Hospital No. 12. Staffed by Navy medical personnel, the facility occupied the Royal Victoria Hospital at Netley, 5 miles from the major Channel port of Southampton. In the months leading up to D-Day, Base Hospital No. 12 was in the vortex of invasion prepa-

rations. As allied fighters and bombers flew overhead on their way to France, the staff made ready to treat unknown numbers of casualties resulting from the invasion. What follows are the reminiscences of two Navy nurses, themselves veterans of D-Day.

Mrs. Helen Pavlovsky Ramsey grew up on the Eastern Shore of Maryland and Delaware. She joined the Navy in spring of 1943 and went to England in February 1944. She returned to the United States in September 1944 and was at Mare Island until the end of the war. She then left the Navy, married, and raised a family in West Virginia.

Mrs. Sara Marcum Kelley was a



Left: The quarter-mile-long Naval Base Hospital No. 12, Netley, formerly the Royal Victoria Hospital, was built in the mid-19th century. **Below:** Navy nurses destined for duty at Base Hospital No. 12, check in at the London headquarters of U.S. Naval Forces Europe.



ward nurse originally from rural Kentucky. After graduating nursing school in January 1943 she soon joined the Navy Nurse Corps. After serving at Bethesda Naval Hospital for a year, she went to England to take part in the medical care for the Normandy invasion. Departing England, she returned to the States and became a physical therapist. Mrs. Kelley left the Navy in 1950.

Under Fire

[Mrs. Kelley:] While I was at Netley, we had lots of air raids. We were supposed to go to the air raid shelter, but we never did. I wasn't scared then. Now, I would probably be under a bed or a shelter. I checked the shelters out and they looked like a

tomb or something. I thought that if I'm going to go, I'm going to go. It wasn't very good sense.

Instead, we would turn our lights off in our rooms and watch the fireworks. We were surrounded by ack ack guns which fired at enemy planes and the place really vibrated when they shot those guns. Of course, it made the patients real nervous. Some of them would get under their beds. But, as I said, I guess I didn't have sense enough to be afraid.

[Mrs. Ramsey:] After D-Day, the Germans began shooting V-1 rockets, known as "buzz bombs" at England. Although we had air raid shelters I don't think we ever used them. At the foot of every bed hung a gas mask and helmet—every patient

had a helmet. If we were bombed we were to pull the patient off the bed to the floor and push him under the bed, putting their helmet on first. We would hear the buzz bombs whizzing and suddenly the sound would stop as its engine stopped and they fell. There would be a breathless pause as we waited until the explosion would be heard. Although parts of Southampton were destroyed, thank goodness we were spared. Then after the buzz bomb attacks were over, the V-2s began. One of the things that struck me so emphatically was the British people. They would be bombed out of their homes and they'd salvage what they could and go on with life. I was so impressed with that. They had been very nice to us and we had made friends. They were able to share with us what they had and I just admired their spirit so much.

The Hospital at Netley

[Mrs. Ramsey:] The Army had been there before we arrived. I think they took over from the British and then we came in and took over from them. I don't think the Army was

Ambulance delivers patients to Base Hospital No. 12, Netley.

there for any length of time because they weren't ready for us. The Royal Victoria Hospital at Netley was built during the Victorian era. It was a very cold monstrosity. The wards were huge. I have no idea how many beds there were in a ward. There was a fireplace at either end. This made the place terribly cold and damp and certainly not conducive to treating patients.

The Seabees came over and remodeled the whole thing to make it usable. They converted those wood-burning fireplaces—actually wood was at a premium so they burned a kind of coke—to gas and that kept us warmer.

[Mrs. Kelley:] The grounds outside the buildings were beautiful, with wonderful surroundings and the view of the water. Unfortunately, the hospital was not in great condition. The plumbing was atrocious. From the bathtubs and the sinks, the water drained into a trough that went halfway around the room before it finally went into a pipe and out. Each room had about 30 or 35 beds, but the rooms weren't connected, which is not very efficient when it comes to nursing because you would have to go out into the main corridor and then around into the room. Usually you were just assigned to one room and then you would help out someplace else if you weren't busy.

Luckily, the Seabees came and put in showers. They also did some work on the nurses' quarters, so unlike the Army nurses who had to live in tents, we were able to live inside.

D-Day and Treating Casualties

[Mrs. Ramsey:] We knew the ships were gathering for the invasion. It seems to me it took at least a week



for all the ships to gather just outside our hospital in Southampton Water (the harbor). We could go outside and sit on the waterfront and watch. One day it seemed like the whole area was full of ships and the next morning there was not a single one. We knew the invasion was beginning. We were on alert. We could not leave and were on duty 24 hours a day. We didn't know what we were waiting for.

And then the casualties came. It took about 3 or 4 days after the invasion before we started receiving casualties. I was an operating room supervisor. We had two operating room theaters, one upstairs and one downstairs. At first, we started out with one and then we required two because we just couldn't handle all the casualties in one theater. When I say theater, I mean several rooms, each room with its own surgeon and nurse, and corpsman. It was one big unit. I was in charge of the one downstairs. The first casualties came into my operating room. I remember how busy we were and how they kept coming and coming and we had no place to put them. We put them out in the halls and everywhere.

We were only there as a receiving hospital. We received the casualties,

took care of them, removed the bullets and shrapnel, did the debridement, cleaned them up, poured penicillin and sulfa into the wounds, wrapped them up, and sent them inland to the Army or to British hospitals inland, or by air to the United States, especially if they were bad burn patients. So we didn't keep them very long. The operating room nurses would pitch in and help the doctors do debridements and remove bullets. Until recently, I had the first bullet I had removed myself and managed to keep it for many years but I have lost it.

Anyway, we were busy and we never thought about food or sleep or anything else. The doctors as well as the nurses and corpsmen were taking care of patients. We did not sleep for the first 24 hours, and then finally sleep had to be rationed because no one would leave their work. The captain issued an order letting certain ones go and get some sleep. And then when they came back others would go. Our food was brought to us in surgery. We lived on sandwiches and coffee for a long time. When we had a minute, we would grab a bite. And that's the way we handled the first 24 hours. As the casualty load lightened, things got back to a decent pace.

I also got to use penicillin for the first time. We had these little tin cans that looked like salt shakers. They contained a mixture of penicillin and, I'm sure, sulfathiazole, and we would just use them like salt shakers and sprinkle it into the wounds. And I've read since, that it was that mixture of sulfa and penicillin used in those early days that saved many a limb and kept infections down to almost zero. They were both miracle drugs. Of course, we also gave penicillin intravenously.

We received casualties fairly steadily but not at the rate we did at the beginning. As soon as the troops landed on the beaches and went farther inland, the Army went right in and set up their field hospitals so they could do a lot of the immediate work that we were having to do at the beginning. And that took a load off of us.

[Mrs. Kelley:] All types of ships brought the casualties from Normandy. The ships landed in Southampton because our pier could only handle small boats. They brought them by ambulance from Southampton which was 5 miles away.

There was a railroad track right behind the hospital. We kept the patients for 24 to 48 hours and as soon as they could be moved, they were put on this hospital train and sent to the north part of England and we got ready for some more.

We treated mostly Army personnel, but there were also a few Navy men as well. I remember a lot of the casualties were suffering from "shell shock." Some of them didn't know who we were. They thought we were Germans and they wouldn't tell us anything except their names and serial numbers. They were classified as mentally ill. Some of them were just farm boys and the shock of war was just too much for them.—JKH

Buzz Bombs at Netley

July 1944

MEMORANDUM TO ALL HANDS

Subject: Buzz Bombs

1. The necessary precautions to be taken in case of an attack of the so-called "Buzz Bomb" are listed below.
2. Stay inside. Do not place yourself in such a position that the nearby explosion of the bomb would injure you.
3. When the alert is sounded adjust all blackout shades immediately so as to prevent personal injuries from shattered glass.
4. During working hours when "Secondary Warning" is sounded on the Klaxon, report immediately to your Air Raid Station. After working hours only the standby section is to report. Do not remain outside to see if it is coming. It takes but two minutes and twenty seconds for the bomb to reach this facility after the Klaxon is sounded. You are not a spotter, you are assigned a specific duty and a delay in the performance of your duties may cause panic and disaster to your mates and to yourself.
5. If there is no immediate shelter available, forget your false dignity and lie down on your face, tuck your elbows under your chest, and cover your ears with your hands. Remember, however, that you must keep your stomach off the ground, for if it is touching, blast tremors may harm you internally.
6. Experience has shown that the bomb only causes blast, which is above ground, leaving only a very shallow crater made by the bomb, so that below surface shelters give the greatest security.
7. Above all, keep calm. Remember, your action is reflected upon the patients for whom you must care. Unnecessary excitement is more quickly noticed by one who is ill. Don't give yourself away, for not only will you suffer, but every person with whom you come in contact must depend wholly upon your reliability to "carry on" under distressed conditions.
8. **REMEMBER!** A personal injury does not only affect you, but it also plays a great part in the efficiency in the operation of this hospital.

J.W. Miller
Captain, (MC) U.S. Navy
Executive Officer



BUMED Archives



Navy Medicine

May-June 1944

Jennifer Mitchum

On 6 June, American and British forces, augmented by Canadians and other Commonwealth nations, took forces of Free French, Free Poles, and troops from other occupied nations, landed on the coast of Normandy in what would become the greatest amphibious operation in history.(1) Two U.S. divisions were put ashore in the western

area in the Vierville-Colleville sector (Omaha Beach) and near St. Martin-de-Varreville (Utah Beach).

Troops landing on Omaha Beach were met with heavy cross-fire coming from cleverly-concealed gun emplacements, machine gun nests and pill boxes. In addition, there were slit trenches, tank traps, and antitank ditches. Between the high and low

water levels on the beaches, the enemy had installed several rows of underwater obstacles interconnected by barbed wire and thickly sown with mines.

Casualties were heavy but troops continued to move in toward the beach. By 1030, the entire landing force was committed, but enemy fire pinned them down on the beach. Neverthe-

Left: Members of the U.S. Navy and Second Beach Battalion catch a breather on the French beach following heavy action in the invasion of Normandy.

less, invaders had suppressed enemy action on the beach by late afternoon, except for sniping and occasional artillery and mortar fire. The American forces on Utah Beach had a much easier time. They encountered limited small arms and artillery fire.

Navy Medicine

The Navy Medical Department's primary responsibilities were to provide medical service to all attached and embarked personnel between the ports of embarkation and the assault beaches, seaward evacuation and hospitalization afloat within the combat zone, and medical services operating jointly with the ground force to all personnel in the beach area.

The first Navy medical personnel landed at H-hour-plus-40 minutes. Initially, 10 medical sections were committed to Omaha and six to Utah. On Omaha Beach, where there were many casualties, doctors and corpsmen could only render first aid. On Utah Beach casualties were relatively light and medical units were able to organize and establish medical facilities more quickly. By D-Day-plus-1, all remaining beach battalion medical sections had landed on designated beaches.(2)

Under enemy fire, medical personnel loaded special litter-equipped jeeps with as many as 200 casualties an hour and evacuated them to DUKWs (amphibious trucks), LCVs (landing craft, vehicle, personnel), and LCTs (landing craft, tank).(3) From these craft, wounded were transferred to British hospital carriers, APAs (attack transports), AKAs (attack cargo ships), LSTs (landing ship, tank) and LCIs (landing craft, infantry) for evacuation to England.

LSTs, however, were the primary evacuation vessels. On D-Day, there were 103 LSTs in the task force. Of these, 54 had been structurally converted for casualty handling and the remaining 49 were augmented with additional medical personnel and supplies.(4) Basic structural changes included demountable brackets to accommodate 147 litters arranged in tiers 3 high—24 tiers along the starboard bulkhead and 25 along the port bulkhead of the tank deck. In an aft corner of the tank deck, a slop sink with a light was installed. In addition, an electrical outlet, folding counter for portable sterilizer, and trays were all enclosed in a removable metal cage. There were also suitable stowage facilities for litters and bracket arms on lateral bulkheads. Moreover, two mounting brackets for operating lights were affixed over a mess table in the crew's mess room.

The medical complement aboard each of the 60 American LSTs consisted of two medical officers and 20 hospital corpsmen, and an Army surgical team of one surgeon and two assistants.(5) On return trips to England, doctors and corpsmen worked around the clock tending to wounded. The transport, USS *Bayfield* (APA-33), was sorely taxed with casualties. On one given night, 307 casualties were brought aboard the ship.(6)

Medical Facilities in England

Medical facilities in England were adequate for caring for the influx of patients coming from French beaches. Most patients had received first aid on evacuation vessels and needed definitive treatment. On D-Day, a few casualties arrived at Portland and then at Southampton on D+2 days. The

heaviest casualty loads came in to both ports on the third and fourth day. By D-Day-plus-22, approximately 12,834 patients had been unloaded at Portland and 6,065 at Southampton.(7) Medical facilities at Plymouth and Falmouth received fewer casualties. Whenever feasible, Navy casualties were sent to the 1,000-bed U.S. Navy Base Hospital No. 12 in Netley, England near Southampton. As many as 300 patients were admitted to the hospital daily.(8)

Saipan

Coming on the heels of Normandy, another major amphibious operation was about to begin. In the Pacific, attention focused on the Marianas. The island chain, 1,100 miles south of Tokyo, would provide advanced bases for the attack on Iwo Jima and airfields from which the new B-29 "Superfortress" Army Air Force bombers could attack Japan.

Key to the enemy defense of the Marianas was Saipan where the Japanese had systematically prepared heavy fortifications since the end of World War I. In February, a task force under ADM Marc Mitscher had bombarded the island. D-Day was set for 15 June.

In preparation for Saipan, doctors and corpsmen at Maui, HI, received training in field sanitation, tropical diseases, care and transportation of wounded, and first aid. The average medical battalion consisted of 50 corpsmen, 9 bandsmen (to be utilized as litter-bearers), 2 drivers, and 2 medical officers.(9) In addition, 27 dental officers were attached to several units and served in several roles including sanitation, mess, water supply, and evacuation officer.(10)

Over 800 ships transported troops from Hawaii, the Solomons, and the west coast of CONUS to Saipan. It was the largest fleet yet assembled in the Pacific.(11) En route, medical personnel attempted to keep troops healthy. Nevertheless, sanitation related problems resulted in several ailments among the men. For example, improper laundry care caused many personnel fungus infections. Moreover, over 90 percent of the troops in the Fourth Marine Division had mild to severe diarrhea at one time or another.(12) Similarly, dysentery was a problem on some vessels. On USS *Birmingham* (CL-62), 244 persons suffered with bacillary dysentery 5 days before going ashore.(13) To reduce the incident, crewmembers sterilized mess gear and washed their hands with antiseptic hand solution. Moreover, medical personnel inspected food handlers. Doctors and corpsmen treated serious dysentery cases with sulfa drugs, penicillin, intravenous glucose, and blood transfusions. By 14 June, however, ambulatory patients were able to man their battle stations.

The Assault

After days of intense bombing, amphibious tractors wallowed in toward the reef and troops disembarked. Despite the prebombardment, approximately 32,000 defenders welcomed marines with heavy artillery, mortar, and machine gun fire. Although many of the invaders were hit, 8,000 men managed to go ashore within 20 minutes.(14)

Accompanying assault troops were company aid men who, with their seabags full of medical supplies, trampled over bodies and supply wreckage to render first aid to the fallen. Under heavy enemy fire, doctors and corpsmen stopped hemorrhages, applied sulfa drugs, dress-

ings, and splints, administered morphine, and then carried wounded back to battalion aid stations that had been set up in trenches and dugouts. From there, they transferred wounded to collecting and evacuation stations.

Navy medical personnel often endangered their own lives to treat wounded. For example, corpsman Blaine Rideout and LCDR Bristol Nelson, MC, journeyed, unprotected, down an open beach to tend to two men that had been shot by a sniper.(15) Invading forces were confined to the beach for hours and had to fight for every inch of it. Before morning, the Marines had suffered 1,750 (estimated 350 dead, the rest wounded) casualties.(16) Medical personnel were also among the casualties. In the Second Battalion, Sixth Marines, a mortar shell hit the battalion surgeon in the first 10 minutes ashore. Within the first 24 hours, two corpsmen were killed and 10 were wounded. One pharmacist's mate was killed the first night while manning a machine gun.(17)

It took the Americans 3 days to attain their objective for day 1, a beach head 1 mile deep and 4 miles wide.(18) Casualties were heavy the first 5 days, and beach medical facilities were sorely taxed. From D-day to D+3 days, one shore party evacuation station treated and evacuated 1,009 casualties.(19) Jeep ambulances loaded with wounded were often hit by artillery fire. At night troops maintained a strict blackout policy. Initially, shore medical parties lacked a portable light-proof shelter and had to tend wounds the best they could using only the pale gleam of poncho-covered flashlights.(20)

Medical beach parties, comprised of one medical officer and 8 hospital corpsmen from each troop carrier, connected the medical care ashore with the medical treatment afloat.(21)

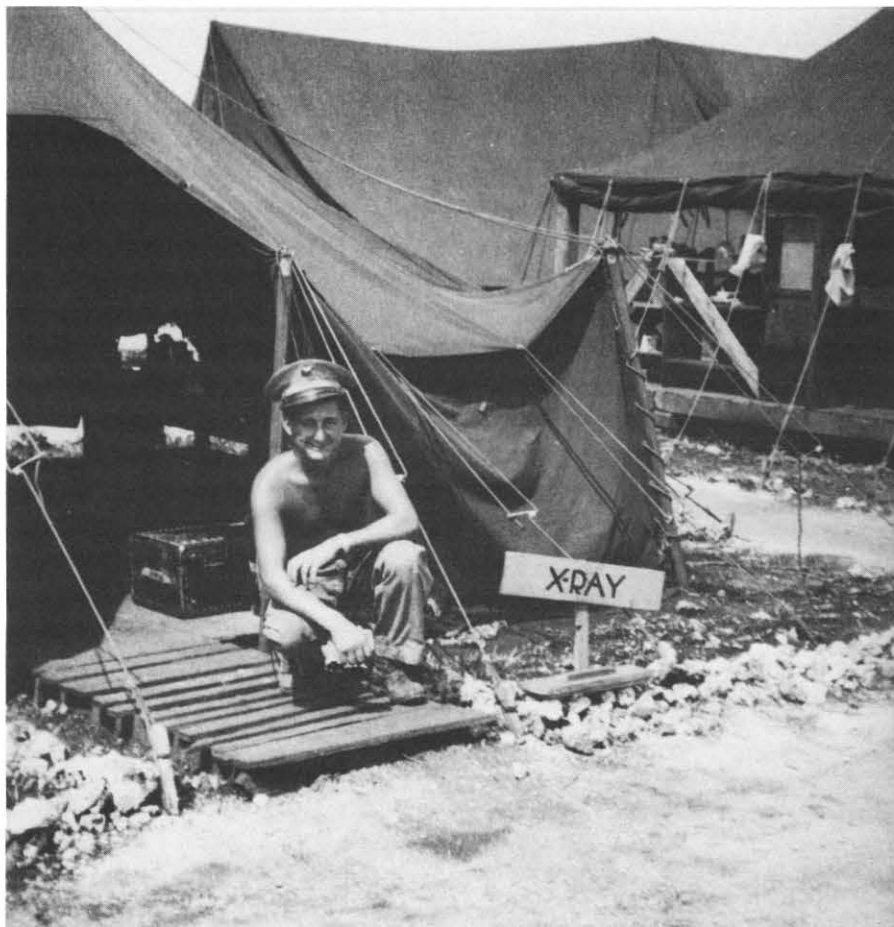
Wearing blue helmets with red crosses painted on the front, back, and sides, medical beach parties sometimes labored up to 48 hours nonstop rendering rudimentary care and setting up a rough casualty evacuation system.(22)

By D+3 days, the Japanese stopped trying to halt the American advance and retreated inland, exploiting the defensive advantage provided by Saipan's rough terrain of limestone rocks and gorges. By 20 June, the Americans reached a lightly damaged airfield at Aslito and isolated the southern end of the island. By this time, medical companies had come ashore and were establishing field hospitals and other facilities. Company C of the Second Medical Battalion, landed near Charon Kanoa and set up a field hospital in what had been a geisha house. Inside were rooms with billiard pool tables, and little bunks or booths. The innovative medical personnel quickly transformed the house into a hospital. "I don't know if they were entertainment for the men and the girls, but there was an area there with little cubbyholes with beds like little bunks, and so they used that place for the wards," said PhM1c Laddie J. Vacek, X-ray technician for the company.(23)

Vacek set up an X-ray room in a little building which had bullet holes throughout. "I had to make my own darkroom and set up a portable generator and the X-ray machine," said Vacek.(24) By nightfall, C company was prepared to perform surgery. In the early stages of the operation, the field hospital was the only definitive surgery center.(25) The Army's 97th Portable Surgical Team joined the hospital shortly after it was established. From D+3 days through D+11 days, 398 Army and Marine person-

Right: A wounded man is transferred from USS *Braine* (DD-630) during the Saipan campaign in the summer of 1944.





PhM1c Laddie J. Vacek, X-ray technician for C Company, Fifth Amphibious Corps Medical Battalion, at "his place of business" on Saipan Island.

nel were admitted to the hospital and 46 major surgical operations were performed.(26)

The Second Marine Division set up a 300-bed hospital in a Japanese radio station building made of steel and concrete and surrounded by 10-foot revetments.(27) The day the division hospital opened, 37 casualties were treated; 58 the next day, and 159 on the third day.(28) Those with minor wounds were housed in tents. In surgical huts, doctors performed several procedures while corpsmen treated shock victims, performed minor debridement, and applied dressings, and casts. Strategically located near the main road network, the division hospital was easily accessible from the front lines and beach evacuation stations.

From the time the hospital opened its doors until D+35 days, 5,156 per-

sons had been admitted; of these 3,408 returned to duty, 1,372 were evacuated, and 71 died.(29) Later, medical companies at Charon Kanoa joined the division hospital raising the bed total to about 1,000.(30)

Disease

Battle casualties comprised nearly two-thirds of those admitted for medical treatment. The others suffered from diseases, illnesses, and combat fatigue. In the Fourth Marine Division, there were 409 cases of dengue fever, 680 cases of dysentery, 26 cases of fungus infection, 414 cases of combat fatigue, 169 cases of psychoneurosis, and 879 admissions from other sickness—a total of 2,577. Because of the heavy casualty load, only those with severe cases were hospitalized. Of those admitted to hospital facilities were 157 members

of the Navy Medical Department for dengue, dysentery, fungus infection, combat fatigue, psychoneurosis, and other diseases.(31) Continuous shelling by the enemy frayed the nerves of the officers and men to the breaking point. On D+4 days, two medical companies were used to specifically treat combat fatigue. Navy medical personnel brought weary patients to the companies to be examined and reequipped prior to returning to duty.

Evacuation

Attack transports (APAs), AKAs, and hospital ships provided the only definitive treatment facilities until field hospitals could be established. Transports bore the brunt of the initial casualties with a collective 3,600 wounded aboard by the evening of D+2 days.(32)

On D+11 days transports sailed for rear bases. Those vessels having less seriously wounded aboard remained in the area so that the men could finish recovering at shore facilities and return to duty. Once transports departed, evacuation became critical until the island was secured. With departing transports went the vessels and personnel needed to care for the steadily rising casualty numbers.

Hospital ships *Solace* (AH-5), *Bountiful* (AH-9), and *Relief* (AH-1) arrived on D+3 days. Although surgical facilities were adequate to handle casualties, ventilation aboard the ships was poor. The captain of *Solace* stressed the importance of air-conditioning aboard the hospital ships writing, "Working as we have done in the tropics, the heat and humidity of the operating rooms is debilitating to the patients and reduces the efficiency of the personnel."(33) He added that it

was difficult to maintain good aseptic technique under such adverse conditions. Overall, 9,546 casualties would be evacuated from Saipan by sea.(34)

Air evacuation began on D+9 days but had limited success. Although 860 casualties were evacuated via air to the Marshalls, a number died en route because there were no flight surgeons or other medical attendants to care for them.(35)

Conclusion

By 5 July, surviving Japanese defenders were trapped on the north end with the sea and cliffs to their backs. The next day, the Japanese commanders committed suicide in the caves of northern Saipan. The day after, 3,000 Japanese survivors made their last mad charge and burst through the shaky line of the 27th Army Division screaming; many were armed with grenades and bayonets.(36)

By 9 July, significant organized resistance had ended with 23,811 Japanese troops dead and 1,780 taken prisoner.(37) Afraid that the Americans would treat them harshly, nearly 8,000 Japanese civilians plunged off the cliffs on the northern end of Saipan following the banzai charge. "For a number of days, there was the sickening sight of bodies of men, women, and children floating by our ship," recalled Dr. Robert A. Conard, junior medical officer of the USS *Montpelier* (CL-57).(38) Fortunately, another 15,000 civilians surrendered. In all about 30,000 Japanese had died on Saipan. The Americans lost 3,426 and 13,099 wounded.(39)

The fact that Navy medical personnel went to life-threatening extremes to aid wounded is reflected in the numbers of those that fell. In the Fourth Marine Division, 161 doctors and hospital corpsmen were casualties.(40) The battalion medical section of the First Battalion, Twenty-

ninth Regiment suffered 27 battle casualties out of a complement of 40. Both medical officers were wounded, but despite their wounds they stayed on duty for hours until relieved. Three members of the section received the Navy Cross; two were awarded posthumously.(41)

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Tobacco Abuse Prevention:

Meeting the New Challenge

LCDR Sarah D. Witte, NC, USN

The Public Health Service of the Department of Health and Human Services has published *Healthy People 2000—National Health Promotion and Disease Prevention Objectives*. These objectives for the health of the nation provide a blueprint for action in health promotion and health education. This article discusses the tobacco objectives, which support the Navy's goal of a smoke-free Navy by the year 2000, and suggests some ways the Navy Medical Department can work toward meeting these goals.

The first *Healthy People* report was published in 1979. Since that time health promotion efforts have made a significant impact on public awareness of the importance of prevention, and the health of the nation has improved substantially. For instance, between 1979 and 1985, the percentage of people who identified smoking as a risk factor in heart disease jumped from 32 to 91 percent and the number of adults who smoked declined from 34 percent to 30 percent, with that decline continuing to the present. With the 1990 objectives, 46 of 55 states and territories accepted the challenge to address the health of their people through state objectives and health promotion initiatives. The Navy has also chosen to advocate health promotion aggressively through Strategic Goal Three, as discussed below, and through the Secretary of the Navy's goal of a smoke-free Navy by the year 2000.

The serious consequences of tobacco abuse in this organization have long been of great concern to Navy medicine. We are attempting to address this issue under difficult circumstances, as we have a much higher percentage of smokers than the national average (42 percent). We also have a history of strong peer and group support for the smoker, and tacit organizational approval of this behavior through the sales of tobacco products at a discount at Navy Exchanges.

The Navy has been taking steps to address tobacco abuse, however. SECNAV Instruction 5100.13A, *To-*

bacco Prevention Program in the Navy and Marine Corps, gives strong guidelines for tobacco abuse prevention throughout the Navy. OPNAVINST 6100.2, *Health Promotion Program*, details strongly worded guidelines for tobacco abuse prevention and gives specific guidance for workplace smoking policies. Unfortunately, and despite these explicit guidelines, individual commands and organizations vary in the strength of the tobacco prevention message they deliver through protecting nonsmokers' rights in the workplace and providing assistance in smoking cessation.

Navy medicine has begun to make a significant impact on tobacco abuse prevention within the Navy and Marine Corps. The significant contributions are that all Navy medical treatment facilities (MTFs) are smoke-free, that Navy MTFs provide some type of smoking cessation assistance, and that Navy Medical Department's Strategic Goal Three states that the Navy Medical Department will be aggressive advocates for health promotion in the Navy and Marine Corps, and includes resources for health promotion through BUMED. While the organization has made a substantial contribution, it is time for MTFs and individual professionals to develop and expand the tobacco abuse prevention we offer. *Healthy People 2000* objectives gives us specific guidelines for action, and criteria to measure our success.

Healthy People 2000 describes three types of objectives: Health Status Objectives, Risk Reduction Objectives, and Services and Protection Objectives. **Health Status Objectives are the end results of the planned interventions. For tobacco, these objectives are as follows:**

3.1 Reduce coronary heart disease deaths to no more than 100 per 100,000 people. (1987 baseline 135 per 100,000) Special populations: Blacks (1987 baseline 163 per 100,000: Year 2000 goal: 115 per 100,000)

3.2 Slow the rise in lung cancer deaths to achieve a rate

of no more than 42 per 100,000 people. (Age adjusted baseline: 37.9 per 100,000 in 1987)

3.3 Slow the rise in deaths from chronic obstructive pulmonary disease to achieve a rate of no more than 25 per 100,000 people. (Age adjusted baseline: 18.7 per 100,000 in 1987)

Specific Risk Reduction Objectives we can act upon include:

3.4c Reduce cigarette smoking to a prevalence of no more than 20 percent for military personnel (1987 baseline 42 percent)

3.4i Reduce cigarette smoking to a prevalence of no more than 10 percent for pregnant women (1987 baseline 25 percent)

3.4j Reduce cigarette smoking to a prevalence of no more than 10 percent for women who use oral contraceptives (1987 baseline 36 percent)

3.6 Increase to at least 50 percent the proportion of cigarette smokers, age 18 or older who stop smoking cigarettes for at least 1 day during the preceding year.

3.7 Increase smoking cessation during pregnancy so that at least 60 percent of women who are cigarette smokers at the time they become pregnant quit smoking early in pregnancy and maintain abstinence for the remainder of their pregnancy. (Baseline: 39 percent of white women aged 20 through 44 quit at any time during pregnancy during 1985.)

Special population target: Women with less than a high school education—cessation and abstinence target 45 percent. (1985 baseline 28 percent)

3.8 Reduce to no more than 20 percent the proportion of children aged 6 and younger who are regularly exposed to tobacco smoke at home. (Baseline 39 percent in 1986)

3.9 Reduce smokeless tobacco use by males aged 12 through 24 to a prevalence of no more than 4 percent. (1987 baseline 6.6 percent for males aged 12 through 17; 8.9 for males aged 18 through 24)

The Services and Protection Objectives we can act upon include:

3.11 Increase to at least 75 percent the proportion of work sites with a formal smoking policy that prohibits or severely restricts smoking in the workplace. (Baseline: 27 percent of work sites with 50 or more employees in 1985; 54 percent of medium and large companies in 1987)

3.16 Increase to at least 75 percent the proportion of primary care and oral health care providers who routinely advise cessation and provide assistance and followup for all of their tobacco using patients. (Baseline: About 52 percent of internists reported counseling more than 75 percent of their smoking patients about smoking cessation

in 1986; about 35 percent of dentists reported counseling at least 75 percent of their smoking patients in 1986.)

These are wide ranging goals, but well within the ability of Navy medicine to affect. The Risk Reduction and Services and Protection Objectives give us specific areas on which to concentrate. The best tool for meeting the goals each command wishes to address is a tobacco abuse prevention program with yearly goals based on the areas outlined by *Healthy People 2000* objectives. A tobacco abuse prevention coordinator would be assigned to monitor a wide range of risk reduction and prevention programs and to develop and monitor the yearly organizational goals. This person would also act as a resource and action person for the local Navy community as they implement workplace smoking policies.

The importance of a strong workplace smoking policy cannot be overemphasized. Only a policy that removes environmental tobacco smoke from Navy workspaces can begin to overcome the history of this organization's support for tobacco abuse. There is an embarrassment of riches from the EPA and OSHA to support these policies. OPNAVINST 6100.2 states "The CNO and the Surgeon General of the Navy have determined that environmental tobacco smoke (ETS) presents a health hazard in common/shared work and berthing areas. ETS is a major source in indoor air pollution and causes lung cancer, respiratory illness, and cardiovascular disease in non-smokers. It is technically and economically impractical to eliminate ETS through ventilation." It further states "Where conflicts arise between the rights of smokers and the rights of nonsmokers, the rights of nonsmokers shall prevail."

Most large commands in CONUS have already implemented smoking policies. These policies need to be reviewed to ensure they are in compliance with the latest standards—specifically no smoking in any building in which DOD employees work. Indoor smoking lounges are no longer acceptable. At many overseas duty stations and on ships, smoking policies are extremely limited. The local medical department representative must take the initiative to rewrite and/or revise these smoking policies. The goal of a smoke-free Navy by the year 2000 must begin here.

A tobacco abuse prevention program based in a Navy MTF should optimally address smoking cessation interventions, target specific populations for cessation programs, and address health promotion activities. Smoking cessation assistance and intervention should be planned and provided for four distinct patient populations—the smoker who is thinking about trying to quit on his own, the

healthy or unhealthy smoker who is being seen as an outpatient by any health care provider, the inpatient who is withdrawing in a smoke-free hospital, and the smoker who needs intensive assistance to quit smoking.

Using *Healthy People 2000* classifications, we can also target populations based on diagnosis. For example, the specific high-risk smokers who would require intervention would be pregnant women and those using oral contraceptives (OB-GYN clinics), who smoke (pediatrics, clinics and wards), and those healthy active duty members (military sick call), as well as those patients who are already high risk or suffering the effects of smoking-related illnesses. Each MTF should plan their activities based on their patient population, assessed community needs, and *Healthy People 2000* objectives.

Smoking Cessation Interventions

Self-help material should be easily accessible in all inpatient and outpatient areas. Smokers who are thinking about quitting, or friends and family members of smokers, should have access to general information without having to interact with a health care provider. The best material of this type does not necessarily concentrate on the health effects of smoking, but gives positive feedback and practical suggestions. Examples of these excellent materials include the American Cancer Society's *Smart Move! A Stop Smoking Guide* and *Clearing the Air: How to Quit Smoking*, and *Quit for Keeps* from the U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health; NIH Publication No. 88-1647. Self-Help material is also available that targets pregnant women and new mothers. These materials give suggestions for stopping, as well as referral information into more intensive resources. Examples of these materials are easily available through the resources listed below.

The second type of smoking cessation intervention is designed to be used in the outpatient area, and will involve a change in current practice. Physicians, dentists, nurses, and all health care providers must counsel their patients to stop smoking. Most physicians rank smoking as the most important behavior affecting health, but both smokers and physicians report that counseling smoking to quit is not a routine part of medical care. Many reasons for this discrepancy exist, including not feeling comfortable counseling patients about smoking cessation, not believing it does any good, not feeling it is worth the time, not knowing referral resources, and for our civilian counterparts, not getting third party reimbursement for smoking cessation counseling. However, the research has shown overwhelmingly that minimal physician interventions are

both cost and time effective in assisting smokers to quit.

The young, healthy male who smokes is the least likely to be advised to quit using tobacco. It is understandable, with our overloaded system, that we would concentrate our efforts on patients who have easily identified risk factors, or have already experienced health effects. We must remember, however, that if we don't address tobacco abuse today, we will be addressing tobacco-related illnesses tomorrow.

There are several excellent programs designed to be used in the outpatient area with which we may intervene with this population. These programs use both physician and nonphysician counselors, minimal office time for the provider, and have been proven to be effective in assisting smokers to quit. Additionally, they require minimal inservice training time for staff. At Naval Hospital Patuxent River, MD, we implemented the American Association of Family Physician (AAFP) Stop Smoking Program. In this program, the physician identified all smokers during initial history, and delivered a strong suggestion to quit smoking. Patients who expressed an interest in quitting were either given self-help material or were referred by consult to the ambulatory care nurse, who had experience in smoking cessation. The smoker had three 15 to 30-minute appointments with the nurse—an initial meeting, a second meeting within a day or two of quitting, and a followup meeting 2 weeks after quitting. The nurse also made several followup phone calls with patients who were having difficulty. Patients identified as having a strong physical addiction component to their smoking used nicotine polacrilex gum with this program; the new nicotine patch has some potential benefits for this population.

When patients completed the program, the consult was returned to the outpatient record as a reminder to the physician to follow up on the next routine appointment. By the time this program had been running successfully for a year, most physicians in the hospital were routinely referring patients into the clinic. Patients who were referred were evaluated by the nurse and then put into the appropriate program—self-help, the AAFP Stop Smoking Program, or a Stop Smoking Clinic run in conjunction with the Family Service Center. This program was successful for us because both physician and nursing staff were committed to helping smokers quit, and made smoking cessation a priority.

All inpatient areas should routinely address tobacco abuse in their patients, assist with withdrawal while in the hospital, and provide assistance with maintaining abstinence after discharge. Inservice education can address

topics such as recognizing tobacco withdrawal, helping the patient identify ways to maintain abstinence at home, and relaxation techniques. A model for an inpatient program was suggested in "Guidelines for Conducting a Hospital Based Smoker's Consult Service" in the November 1991 issue of *Military Medicine*.

A number of smokers will require a more intensive intervention than those described above. Referral into a group program such as the American Lung Association Clinic or the American Cancer Society Clinics will provide this type of intensive followup and support. Many hospitals and/or family service centers run these group programs. Nicotine replacement therapy has a place in these programs, as many smokers who are entering a group program have tried unsuccessfully several times to quit. If nicotine addiction played a large role in their previous failure, then replacement therapy can be very successful for them. Unfortunately, much of the media attention on the new patches has not emphasized the importance of structured programs in conjunction with the replacement therapy; lack of proper education and supervision can make them a dangerous option.

Health promotion professionals can also impact tobacco abuse behaviors by promoting nationwide efforts to stop smoking for the day such as the Great American Smokeout, UN Tobacco-Free Day, or Non-Dependence Day. These programs are effective in encouraging smokers to quit. Through current Navy health promotion programs, such as Forge the Future, we can address tobacco abuse in a positive, upbeat way, and reach the larger Navy community. Other interventions may include programs designed for young people that address tobacco company advertising, such as the DOC (Doctors Ought to Care) programs, and advertising campaigns to promote not smoking in the home when young children and pregnant women are present. Health promotion efforts can also target the population who uses chewing tobacco.

Materials and resources are easily available. The following organizations offer either free or low cost materials for self-help and group programs:

American Cancer Society
1599 Clifton Road, NE
Atlanta, GA 30329
1-800-ACS-2345

National Cancer Institute
9000 Rockville Pike
Building 31, Room 4A-18

Bethesda, MD 20892
1-800-4-CANCER

American Heart Association
National Center
7320 Greenville Avenue
Dallas, TX 75231
214-750-5300

Office on Smoking and Health
Centers for Disease Control
5600 Fishers Lane
Park Building, Room 1-16
Rockville, MD 20857
301-443-5287

American Lung Association
1740 Broadway
New York, NY 10019-4374
212-315-8700

The telephone book will also carry numbers for your local offices of some of the above organizations.

We in Navy medicine have a unique role and a unique responsibility to address tobacco abuse within the Navy and Marine Corps. In order to fulfill our obligations in this area, we must each accept the responsibility to address tobacco use with our patients, and we must, as an organization, accept responsibility for providing a wide range of prevention and promotion services. We have the key role in determining tobacco abuse in the Navy and Marine Corps in the year 2000.

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Naval Medical Research and Development Command Highlights

●Improved Hearing Protector

Hearing loss from exposure to hazardous noise is a major health problem in some military working environments. In 1992, the Veterans Administration reported 60,476 hearing loss compensation cases with associated compensation costs of more than \$230 million. In addition, the Navy paid nearly \$8 million in compensation in the same year for 2,560 civilian cases of hearing loss. To improve hearing conservation, researchers at the Naval Aerospace Medical Research Laboratory, Pensacola, FL, are developing a new hearing protector. Unlike more expensive prototypes being developed by the other services that use electronics, this hearing protector is designed on the principle that sound pressure waves will not propagate through a vacuum. This Navy-designed hearing protector consists of ear cups with a vacuum space sandwiched between two layers of material. A major challenge in the development of this hearing protector prototype was designing a gasket that would not transfer sound energy to the wearer as vibrations. After testing many commercially available materials which proved unsatisfactory, Navy researchers formulated a special gasket material with excellent noise reduction capabilities. A patent has been filed on the material, and several private industries have expressed interest in licensing the technology. In 1995, the goal of researchers is to incorporate a communications speaker in the hearing protector for use in operational environments; in many operational settings, double hearing protection (plugs and muffs) is required, which interferes with communication devices. If future testing of the prototype hearing protector confirms the expected noise reduction, the use of double hearing protection could be discontinued. For more information contact LCDR Paul L. Knechtges, MSC, NMRDC Research Area Manager for Fleet Occupational Health, DSN 295-0885 or Commercial 301-295-0885.

●Noninvasive Monitoring of Student Helicopter Pilots' Visual Instrument Scan Patterns

The ability of a pilot to visually scan and integrate information provided by flight instruments is one of the determinants of how well a helicopter is controlled. One important area of instruction for student pilots is the selection of which instrument to attend within a given flight context and how to coordinate the information available from several instruments. However, evaluation of the effectiveness of a pilot's instrument scan is generally limited to the successful performance of a given flight maneuver. Researchers from the Naval Aerospace Medical Research Laboratory, Pensacola,

FL, are working closely with helicopter pilot instructors at NAS Whiting Field to identify the major difficulties students face in acquiring an effective instrument scan. A noninvasive eye-tracking device has been installed in a motion-based helicopter simulator. This device provides an on-line, real-time video record of student instrument scanning patterns and flight performance. The video record will be used for debriefings, teaching, and flight grading standardization. This study is the first to gather flight performance data in conjunction with instrument scan data using a device that does not interfere with the behavior of the student. For the first time, an objective standard of operations performance will be applied to evaluate the effectiveness of instrument scan. This research is producing a unique scientific resource—eye tracker and simulator—that can be widely used by the scientific community to study instrument scan patterns and the acquisition of flying skills in motion-based simulators. For more information contact CDR T. Singer, MSC, NMRDC Research Area Manager for Aviation Medicine and Human Performance at DSN 295-0878 or Commercial 301-295-0878.

●MEDTAG

Researchers from the Naval Health Research Center, San Diego, CA, developed the concept of an automated method of capturing battlefield medical data, which uses an electronic tag worn by combat personnel. This device, called MEDTAG, includes an integrated read/write capability, a backlit LCD display to present users with menu options, two data entry buttons, an internal clock for time/date-stamping, and a data communications port for transferring information to and from a host computer. A field evaluation of the operational effectiveness of the MEDTAG prototype demonstrated the benefits of automated battlefield medical data collection. Navy corpsmen used MEDTAG while participating in battlefield and battalion aid station field exercises during Fleet Marine Force training at the Field Medical Services School Camp Pendleton, CA. In the areas of treatment, patient condition, and patient disposition, the MEDTAG device collected the required medical information faster, more accurately, and more completely than current manual methods. These features of the MEDTAG enable corpsmen to record the most critical data faster and with greater accuracy resulting in a higher level of battlefield casualty care. For more information contact CDR P.D. Kent, MC, NMRDC Research Area Manager for Combat Casualty Care, DSN 295-0880 or Commercial 301-295-0880.

Naval Health Sciences Education and Training Command (HSETC) Highlights

●EME Program

The Bureau of Medicine and Surgery (BUMED) has entered into a unique partnership with the Naval Postgraduate School (NPS) to provide senior Navy medical staff with valuable management training.

Through the new Executive Management Education (EME) program, scheduled to begin in September 1994, the Postgraduate School's Administrative Sciences Department will bring executive management courses directly to military treatment facilities (MTFs).

Faculty will offer a wide range of courses targeted to the needs of current and prospective MTF senior managers and commanders: seminars in budgeting, conflict resolution, and personnel management are planned.

The program is a response to a public law requiring that all commanding officers of MTFs demonstrate professional and administrative skills. Innovative features include:

—On-site instruction at the worksite. This new approach of "bringing the training to the trainee" will minimize interference with the individual's current duties, allow more people to be trained, and reduce overall training costs.

—A flexible, modular system of courses tailored to the individual's prior management education and training background.

—Association of NPS Administrative Science faculty teams with specific groups of MTFs to foster an intimate knowledge of the treatment facilities and their training needs, and to provide material for teaching case development.

—Involvement of NPS Administrative Science graduate students, especially MSC, and NC students, who will focus on and respond to managerial problems jointly identified by EME project faculty and MTF senior leaders.

The Navy Medicine Program Manager and point of contact for EME is CDR William T. Nunns, NC, at DSN 295-5315 or Commercial 301-295-5315.

* * *

●Reserve Medical Personnel (RAMP)

Program Offers NECs

Active drilling reserve HMs and DTs may attain critical Navy NECs while attending an associate-degree granting institution in an approved program of study. Students can attend full-time or part-time; HSETC pays tuition and fees. The most needed NECs at present are surgical technician, medical laboratory technician, physical therapy technician,

dental laboratory technician, and dental equipment repair technician. For further information and a copy of the RAMP Student Handbook, call HSETC at DSN 295-2375/2378/5591 or Commercial 301-295-2375/2378/5591.

* * *

●CAMIS Transition to VIPER

To provide the highest quality support for education and training, HSETC is replacing the Computer Assisted Medical Interactive-video System (CAMIS) with a technically superior system—the Visual Information Performance Enhancement Resource, or "VIPER."

VIPER supports all of the originally deployed CAMIS interactive courseware. The CAMIS software has been converted to run on the new hardware and is on a single CD-ROM. The HIV/AIDS interactive courseware material funded and developed by DOD at the Uniformed Services University of the Health Sciences is also available on the CD-ROM deployed with the hardware.

HSETC's CAMIS Program Manager, Mr. Will Peratino, in conjunction with the DOD and Navy Training Policy offices, industry leaders and NAVAIRSYSCOM, identified and procured VIPER. It was the first training delivery system that met both military and industry standards for portability and interoperability of multimedia training-related materials.

Comprised entirely of commercial-off-the-shelf components, VIPER provides the following expanded features:

- Multimedia CD-ROM capability
- Microsoft Windows operation
- Infowindow format compatibility
- Kodak Photo-CD player format capability
- Bar-code controlled playback of videodiscs
- Fax/Modem card for on-line database searches
- Super VGA (1024 x 768) graphics resolution monitor

These features will enable VIPER to provide expanded and continuing support for emerging technology solutions for education and training requirements.

Anyone with suggestions for Navy medical education and training issues should call CDR Kramer, DSN 295-0776 or Commercial 301-295-0776.

To the Editor

Managing MTFs

Having just received your September-October 1993 issue for review, I would like to offer the following comments on the article by Roberts et al. entitled, *Managing Navy Medical Treatment Facilities: The Role of Executive Education*.

Having participated in the data collection effort of phase I of the BUMED/NPS EME Program, I was interested in seeing my colleagues' thoughts on the skills required to successfully manage a Navy MTF. Indeed, the "opportunities to excel" seem to be common throughout the BUMED claimancy. Likewise, the "Gaps in Management Skill Areas" are generally as expected.

As this data is being used to design an instructional program in phase II, I would like to point out that factoring the skill requirements by the skill gaps yields a refined ranking of training requirements, as follows:

Ranking	Rank Change
1. Conflict Management	up one
2. Quality Management	up seven
3. Management of Change/Technology	down two
4. Communications	down one
5. Productivity Management	up eight
6. Organization Design	up two
7. Personnel Management	up three
8. Strategic Planning	up six
9. Individual Behavior	down five
10. Decision Making	up one
11. Group Dynamics	down six
12. Alternative Health Care Systems	up three
13. Information Management	up five
14. Systems Perspective	down seven
15. Legal Issues	down three
16. Labor/Management Relations	up one
17. Ethics	down eleven
18. Financial Management	down two
19. Quantitative Analysis	up one
20. Materials Management	up one
21. Facilities Management	down two

Review of the above yields some potentially useful information. Quality Management, Productivity Management, Strategic Planning, and Information Management appear to be important skills for which we are not well prepared. Alternatively, Individual Behavior, Group Dynamics, Systems Perspective, and Ethics may require less instructional efforts than at first perceived.

In addition, one may group these skills as follows: the top five skills reflect strong personal commitment and participation by the leader (individual leadership skills); skills 6-14 (except for 9) are essentially top-management-group skills needed to read and respond to the changing military medical environment; and the last seven are skills which are largely provided by trained specialists within each command.

Finally, I suggest that there is one skill missing from the list. Call it "Operational Readiness Management" and whatever fancy name you wish, it is a skill, it is not implicit in the other skills listed, and must be taught as the Number One requirement skill of a successful Navy MTF commander/commanding officer.

CAPT R.D. Handy, MC

In Memoriam

Former Navy flight surgeon, LCDR Samuel R. Sherman, MC, USNR, died on 21 March 1994 in San Francisco, CA. He was 87. Dr. Sherman was cited for bravery in recognition of his heroism aboard the stricken aircraft carrier USS *Franklin* (CV-13) in 1945. (See *Navy Medicine*, July-August 1993)

Dr. Sherman was a graduate of the University of California Medical School, was a surgeon on the staff of the Mount Zion Medical Center of the University of California, San Francisco, and was in private practice before joining the Navy the day following the Japanese attack on Pearl Harbor.

After initial indoctrination, he was assigned to Alameda Naval Air Station where he was put in charge of surgery and clinical services. In April 1943, he went for flight surgeon training at Pensacola, FL, and was then assigned to Air Group 5 at Alameda Naval Air Station. As a member of that organization, he helped train the men for carrier duty.

Subsequently, Dr. Sherman and the Air Group were assigned to the carrier, USS *Franklin* just back from repairs following a kamikaze attack off Leyte in October 1944. Early on the morning of 19 March 1945, as the *Franklin's* crew was readying aircraft for a strike on Japan, an enemy plane slipped through the fighter screen and dropped two bombs on the flight deck. Although wounded by shrapnel and subjected to searing flames and exploding ordnance, Dr. Sherman set up an emergency sick bay and dressing station and cared for hundreds of gravely wounded men. Later, when the opportunity became available, he calmly superintended the transfer of casualties to the USS *Santa Fe* (CL-60) alongside. Defying orders to evacuate and threatened with a court martial, he remained aboard the crippled carrier, refusing to leave while there were still casualties to be tended. And in lieu of the promised court martial, LCDR Sherman instead received the Navy Cross and two Purple Hearts.

Following his World War II service, Dr. Sherman returned to San Francisco, where he was elected representative to the Mount Zion Medical Center's medical board and was appointed associate chief, then senior in surgery. He also served as president of the San Francisco Medical Society, the California Medical Association, and was active on several influential committees of the American Medical Association.

In 1983, the AMA honored Dr. Sherman with the Benjamin Rush Award for outstanding public and community service. He also worked with voluntary health agencies in San Francisco: The Cancer Society, The Heart Association, and the Mental Health Association. Following his retirement, Dr. Sherman helped institute the regulations for the federal Medicare program.

To patients and colleagues, he was "Dr. Sam." A credit to his profession, all who knew him will miss his generosity, humanity, and wisdom.



Dr. Sherman

Navy Medicine 1952



BUMED Archives

Helicopter landing aboard USS *Repose* (AH-16)
during Korean War.

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